MARCH, 1953
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Business Magazine for Leaders Who TRAIN and ADVISE Farmers

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New Developments in Crop Breeding

Antibiotics and Hog Production

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Photo by Phil Palmer

SIXTH ANNUAL HUSBANDRY ISSUE

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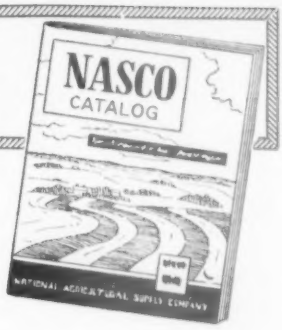

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AND AGRICULTURAL LEADERS

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Business Magazine for Leaders
Who Train and Advise Farmers

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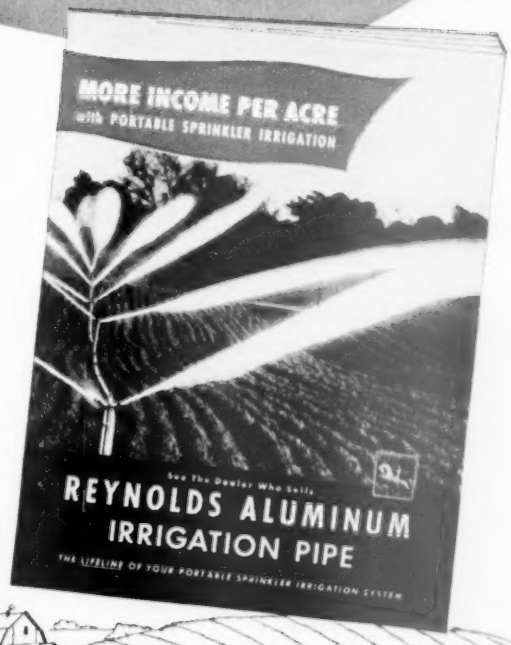
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WASHINGTON NEWS

By Fred Bailey

Extension Not to Handle ACP

You can discount rumors that shift of the large $250,000,000 conservation payments program from PMA into the Research, Extension, and Land Use grouping means that the Extension Service will take over soil and water subsidies to farmers.

Both Extension and SCS through soil conservation districts are to be given more say-so in conservation matters, but it does not follow that either agency will handle payments. Inside fact is that extension leaders here appear frightened by the possibility. Their view is echoed by leaders in the land-grant colleges and universities.

Fears they want to take over are unfounded, these leaders insist. Privately, they are saying that they "wouldn't touch the payments program with a 10-foot pole."

PMA Prestige Waning

Reshuffling of USDA agencies eliminated none of them, but there is clear indication of the waning prestige of the PMA.

Benson's moves are expected to cut communications lines between the PMA in Washington and its 75,000 full or part-time employees in states and counties.

In observing that ACP would henceforth be under the general direction of Assistant Secretary Coke, Benson added that PMA field services and facilities would continue to handle conservation payments, but only "for an interim period."

Another sign of PMA's falling star is the fact its new head, Howard H. Gordon, co-op leader from Virginia, reports to Davis, head of Commodity Marketing and Adjustment.

Benson's plan to de-emphasize PMA committee work could be frustrated by Congress. Committees are established by law, and Senator George Aiken, Senate Agriculture Committee chairman, recently told this correspondent: "Some kind of committees are needed."

4-H'ers May See Eisenhower

The six national winners of 4-H leadership, achievement, and citizen awards are expected to meet at least two people of some consequence when they come here during National 4-H Club Week.

One is the new 4-H leader, E. W. (Ed) Aiton; the other, President Eisenhower. The former can be found at USDA, in extension offices; the latter resides and works at the White House.

Ed Aiton

Both are reputedly cordial, competent, and hard-working people.

Ed Aiton was the first executive director of the National 4-H Club Foundation before taking over his new duties. He has a master's degree in farm economics from the University of Minnesota, and broad background in 4-H work.

Dwight Eisenhower was lately on an important military mission in Europe, and some while back was graduated from West Point.

At this writing, it is not certain that the six young people coming to Washington will see the President, but this correspondent's extension agents reported they had arranged things "as far as the doorstep."

Benson Mistakes Not Serious

Early bobbles by Benson in handling Congress and the press have led some Washington wiseacres to say the new secretary may be a "man of extinction."

The talk is not to be taken seriously. How Benson fares, finally, is probably to depend in large measure on what happens to farm prices. Poor press work in behalf of the secretary early in his tenure probably will be corrected.

Already, Benson has taken personal steps to amend inaccurate official statements that the USDA is the "largest of all the nation's civilian agencies, swollen into a huge bureaucracy . . ."

Actually, USDA is the only federal department with fewer employees than in 1940, and at least one civilian department is larger.

Extension Still Growing

Earlier forecasts of added Extension Service power and more local control of federal farm programs are borne out by appointments rounding out the new administration's high command at U.S. Department of Agriculture.

Men high in the saddle at the Department are to reflect Boss Benson's determination to reduce farmer reliance on government aids.

USDA's No. 3 man, Assistant Secretary J. Earl Coke, comes to his new job directly from extension work in California. He had been director there since 1949.

Coke is noted for efforts to bring

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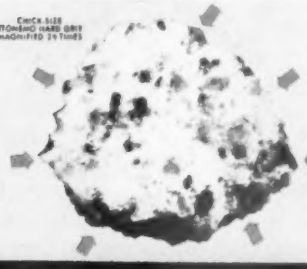

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So we are taking a little time out here to say, "Thanks." Thanks to the John Deere dealers who demonstrated this enthusiasm at introductory meetings at Oklahoma City, Okla., Columbia, S. C., Bakersfield, Calif., Moline, Ill., Minneapolis, Minn., Portland, Ore., Spokane, Wash., and other points—thanks to the thousands of farmers throughout the country for their generous acclaim—and, finally, thanks to everyone . . . for the grand reception accorded these great new John Deere "40" Series Tractors.

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Moline, Ill.

farm programs nearer to the farmer, and to build 4-H membership in his state. A slim, well-preserved man of 52, the new assistant secretary was born on a California dairy farm, and started as assistant county agent.

Leading Role For Coke

Importance Coke will play in framing future farm policies is underlined by the agencies placed under his direction in Benson's widely-publicized regrouping of USDA functions.

As head of *Research, Extension, and Land Use,* the new assistant secretary is in charge of Extension, SCS, Forest Service, Agricultural Research Administration, BAE, Office of Foreign Agricultural Relations, and the ACP (conservation payments program).

J. Earl Coke

Other agency groupings and the men heading them are:

Commodity Marketing and Adjustment, under John H. Davis, Iowa and Missouri farm boy.

One-time Washington director of the Council of Farmer-Cooperatives, Davis' agencies include the CCC, Commodity Exchange Authority, Federal Crop Insurance, and PMA.

Agricultural Credit. Appointment of Romeo E. Short, Arkansas, to hear Farm Credit Administration, Farmers Home Administration, and the REA reflects revived Farm Bureau influence at USDA. Before taking on his new job, Short was vice president of the Bureau.

Departmental Administration, headed by Richard D. Aplin, Boston, includes the Offices of Information, Personnel, Budget, the library, USDA plant and operations, and hearing examiners.

Other important Benson aides are D. K. Broadhead, Benson's executive assistant, a Californian with broad marketing and business experience; Don Paarlberg, top economic counsel to Benson, an economist from Purdue University; and Karl Loos, Washington lawyer, in charge of USDA legal work.—*End.*

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New Developments in Crop Breeding

By I. J. Johnson
Iowa State College

A college worker inspects an experimental planting of soybeans. Improvements in soybean oil content and yields have been made during the past 10 years.

● THERE IS A LOT of work ahead for the plant breeders of the United States.

They have some new tools with which to work. But the problems have been coming along so fast that it has been difficult to hold even, let alone develop new information that gives us any material increases in production.

Furthermore, the development of a new variety or strain of crop is no longer a problem for the plant breeder alone. Improvement of most any kind of crop nowadays is a product of the teamwork of a number of scientists.

Working together, the crop breeder, the pathologist, the entomologist, the soil scientist, and the chemist are making possible new discoveries that will be important to agriculture in the future.

This type of cooperation is being achieved in nearly all crop research activity.

New Program Developed

Another type of cooperation that is comparatively new in crop improvement work is being developed with all segments of the people interested in making new and better seeds available. It brings together the scientists of the United States Department of Agriculture, and of the state agricultural experiment stations, the crop improvement associations and the seed trade industries of the various states.

This organization, known as the Federal Foundation Seed Stock Program, is aimed at keeping seed stocks pure and available in quantity.

Established only about five years ago, it has already made possible the orderly production and maintenance of genetic purity of certain grass and legume seeds that would have been impossible without it. Funds have been made available for the undertaking by the Federal Research and Marketing Act.

Through efforts of the organization, about one-third of the production of alfalfa seed in the United States is now of newer, higher yielding, better adapted strains, and certified as to genetic purity. These varieties include Ranger, Buffalo, Atlantic, and Narragansett.

Other new forage crop varieties, like Kenland Red Clover, are coming into this program when tests have proved their merit. Five years ago the United States was producing virtually no seed of these varieties. Today we're producing about 30,000,000 pounds annually—all certified.

Prospects for high future production of some of our major crops is encouraging when we look behind the scenes and take a glimpse at the progress being made and some of the possibilities for the not too far distant future.

Developments in Forages

The use of principles developed by the corn breeder with new refinements especially adapted for work on perennial crops provided the tools that are greatly accelerating the rate of progress in breeding work with forages.

One of these newer tools is the technique called "Recurrent Selection." This method of breeding with forages is just getting started, although its value is already well established in corn.

Perennial forages have evolved under a system in which major emphasis has been placed upon the survival of the individual plant, rather than upon survival of the individual and the crossbred progeny as is true in annual crops like corn.

Natural selection has played an important role in the improvement of both forage crops and corn. But the rate of

Plant breeders have made great strides in developing good forage grasses. New and better varieties are on the way.

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WEED KILLERS

There's one for every practical farm use!

ATLACIDE — *the SAFER chlorate:* Widely used for non-selective control of weeds and grasses. Kills bindweed, Johnson grass and many others. Destroys roots . . . discourages regrowth.

2,4-D AMINE & ESTER: Selective weed killers for use in grain and grass crops.

METHOXONE (MCP): New selective weed killer for same species of weeds as 2,4-D . . . considered safer in certain crops.

2,4,5-T ESTER: Low volatile . . . controls many woody plants.

BRUSH KILLER: Low volatile . . . combination of 2,4-D and 2,4,5-T. Especially recommended for mixed stands of woody plants and broad-leaved weeds.

CIPC-4L: Pre-emergence spray for control of annual weeds and grasses in cotton; also for dormant spraying in certain other crops.

ATLAS "A": Arsenical solution . . . used to kill annual weeds and grasses, trees and shrubs; also certain aquatic weeds in ponds and lakes.

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Aramite Dusts & Sprays	Lindane Sprays	Copper Fungicide
Benzahex Dusts & Sprays	Parathion Dusts & Sprays	Copper Hydro Bordo
Chlordane Dusts & Sprays	Paris Green	Sulfur Dusts & Sprays
Cubor Dusts (Rotenone)	Potato Dust	Agrox & Mergamma
DDT Dusts & Sprays	Tomato Dust	(Seed Protectants)
Lead Arsenate	Toxaphene Dusts & Sprays	Shed-A-Leaf (Defoliant)

Write for '53 Weed Control Booklet

CHIPMAN CHEMICAL CO.
DEPT. M, BOUND BROOK, N. J.
Manufacturers of Weed Killers Since 1912 . . . of Insecticides Since 1921

CHIPMAN
INSECTICIDES
FUNGICIDES
WEED KILLERS

change over a long period of natural selection for specific characteristics in annual and perennial crops may be quite different.

Under the influence of partial control, the rate of change of a given character, such as earliness of maturity in corn, has been extremely pronounced. The early experiments of both farmer-seedsmen and experiment stations in selecting for this character may be cited as an example of a type of recurrent selection differing only in degree of genetic control from the concepts now being used in forage crop breeding.

Developments in Oats

The work of the crop breeder with oats has been primarily devoted to the development of resistance to disease. Septoria blackstem, helminthospoirum blight, and the stem and crown rusts have been a constant threat to oat yields.

The modern approach of the oat breeder has been the "backcross" system, first widely used by Dr. Fred Briggs, University of California, with wheat.

I am a great friend of analysis. "Why" and "How" are such useful questions that they cannot be uttered too often.

—Napoleon

This system works best for the addition of one or two genes to an otherwise good variety.

This system is now finding special value for the development of most of our new varieties of oats, when the major objective is to add a few genes for resistance to new races of rust. And still better, more resistant varieties are on the way.

Another problem of the oat breeder has been the development of strains that yield well, but are not overly competitive as a nurse crop for legumes.

Developments in Soybeans

There has been a striking improvement in soybean varieties during the past 10 years, both in yield and in oil content. The oil content has been raised from 18 to 19 percent to at least 21 and one-half percent. This is a significant improvement.

In Iowa, yields have almost doubled within the last 10 years. This increase is not all due to better varieties, for better methods of cultural practices have also been developed. But for the country as a whole, soybean yields have been stepped up 5 to 6 bushels through the concentrated breeding program of the last 15 years.

Nor have the breeders been entirely concerned with yield and oil content

alone. They have also been working to develop plants with strong, upright, lodging resistant stalks, with pods that do not shatter and grow higher above the ground to facilitate harvesting.

New and better varieties are on the way, especially varieties that are resistant to certain diseases that may threaten production.

Developments in Corn

Styles in corn are changing, too.

With the advanced mechanization of corn production, large ears that could easily be picked by hand are no longer important. Future trends may see the development of a corn that will produce two good ears per stalk, with a resulting higher total production of grain per acre with less plant nutrients needed for producing stalks.

Much is being accomplished in the improvement of the feeding quality of corn. It seems quite likely that breeders will produce new corn hybrids with much improved protein quality.

Considerable work is already under way, and prospects here, too, seem bright, to develop increased resistance in our hybrids to root rot and show more tolerance to the corn borer.

In the corn breeder's work, the newer system of inbreeding and selection is being studied to learn more about the mechanisms by which hybrid vigor works. These researches might possibly result in greater efficiency in the customary breeding procedure.

Adapt Plants to Fertility

One of the big jobs of the plant breeder in the future is to adapt present day plants to higher levels of fertility than we have ever known before.

The tendency to increase plant populations and the increased use of fertilizers will require the rebuilding of many of our present varieties and strains that can be adapted to high fertility levels and still retain their vigor and individual capacity.—*End.*

★

"Can I help you pick the eggs, Grandma?"

NITROGEN MADE THE DIFFERENCE!

YOU MUST USE BALANCED PLANT FOODS if you expect to harvest a bumper crop of corn. This picture tells the story better than 10,000 words. The corn on the **LEFT** was raised by E. W. Embleton, and his partner-tenant, Harry Dixon, of New Cambria, Missouri. They used 120 pounds of 4-24-12 in the row and 200 to 250 pounds of Spencer Ammonium Nitrate Fertilizer plowed-down. A top-notch farmer raised the corn on the **RIGHT,** too. He plowed down 200 pounds of 0-18-0 to the acre and then used 145 pounds of 8-8-8 in the planter. He also intended to apply a nitrogen side-dressing, but his supplier ran out. Thus, the picture—"N-P-K vs. P-K."

SEND FOR THIS PICTURE

Free to You *in full color!*

NOTHING YOU CAN DO as a County Agent, Vo-Ag Instructor, Extension Worker or Veteran's Instructor is more important than to impress upon the farmers you serve the importance of soil fertility and the remarkable yield increases which can be obtained through the use of balanced plant foods. The agronomists of Spencer Chemical Company, who took the picture above, want to help you tell this story.

FOR THIS REASON, Spencer has prepared a limited number of fine 11" x 14" full-color reproductions of the above picture, with a printed-on frame. While the supply lasts, we invite you, as a reader of this publication, to write for your copy. However, we hope you will make the request only if you are willing to "give the picture wall-space"—that is, to put it up where your students or the farmers you help can see it.

SPENCER AGRONOMISTS say that this picture—and especially in glowing full-color—is the most dramatic indication they have ever seen of the fact we all know: No single plant food *alone*—is enough. Successful farming demands not just N, P, or K—but "N-P-K and Calcium too."

TODAY write to Spencer Chemical Company for your free copy of "The Two Corn Fields."

SPENCER®

SPENCER CHEMICAL COMPANY

606-A Dwight Building **Kansas City 5, Missouri**

A Discussion About Conditioning Soil and an Answer to . . .

How can we best use chemical soil conditioners?

By William A. Albrecht
University of Missouri

● SOIL CONDITIONERS, as a special chemical treatment for heavier soils, are drawing our attention for several reasons.

In the first place, most of us have worked with clay soils enough to know the effort needed to work them into a good granular seed bed at the right season.

We know, too, that they do not warm early because they hold much water.

In the third place, we know that these soils of so-called "heavier" texture are those on which big horses, big plows, and much tillage were the means for good crops and long survival of older civilizations.

Consider Conditioning Clay Soils

Our knowledge of what fertilizers are doing for productivity of the soil makes us ready to consider chemical soil treatments for conditioning clay soils back into the better granular structure most of them once had.

The quick test for a productive soil as applied by the pioneer consisted in picking up the soil and working it in his hands. He wanted to see how readily it crumbled to run through between his fingers. By that hand test of the crumb structure he would probably report that "This will be a productive soil."

Nature had stocked it with organic compounds of a more permanent nature.

Those compounds did not ferment rapidly. They were not quickly changed by microbes. They were more like the compounds nature put around the cellulose fibers of wood to preserve them against microbial attack.

Compounds Aided Soil Structure

They were more like fats, waxes, higher alcohols, and higher acids. They were so large in molecular size that they were chemically sluggish rather than rapidly active. They were more glue-like, or more colloidal.

Consequently these longer-lasting organic substances put into the soil by, and accumulated through, the generations of crops which had grown and died there, were collectors and "cemepters-together" of both the fertility elements and of the clay particles into crumb-sized particles or granules.

The shrinkage on drying, and the glue-like nature of the organic matter was a granulating force. It was also a sealing-off behavior to make the granules slow to take water and to

The top two pictures show nature's way of conditioning soil. The extra fertility in barnyard manure and the organic matter in it plus crop residues and nature's weeds all went back into the soil. They were nature's good soil conditioners. The bottom two photos show a decided contrast. No manure, less organic matter, and poor soil conditions. The two pictures showing the plowed soil were taken two days after plowing and one day after rain. Pictures from Sanborn Field, Missouri Agricultural Experiment Station.

The how and why of NEMATODE CONTROL

A tomato root heavily infested with root knot.

THE SOIL PESTS responsible for root knot are known as nematodes. About as small as these dots . . . they are so destructive that they cause one fourth of all crop failures each year!

Nematodes rob plants . . .

of life-giving fluids by moving into the root systems. Certain species lay their eggs in the roots, about 1500 at a time, forming knots which become large enough to halt the flow of plant nourishment through the roots.

Carrots from an untreated row, compared with a carrot from the D-D treated area of the same field.

What to look for

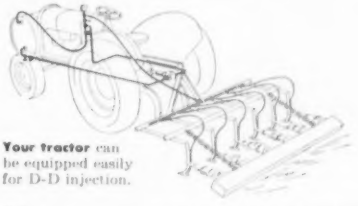
When crops give an indication of stunted or poor growth, pull up a few of the plants and examine their root systems. If the feeder roots are stubby and sparse, or if they are swollen and knotted (root knot), you can be sure nematodes are at work. In root crops such as carrots or beets, look for damage such as in the carrot photo at lower left. If there's any doubt, call your county agent.

How to kill nematodes

A good time to rid land of nematodes is in the spring several weeks before planting. The way to do it is a soil treatment with D-D®, a soil fumigant which is injected into the soil in liquid form. D-D becomes a gas which spreads through the soil and kills the nematodes.

Benefits of D-D

Results are threefold . . . larger yields, better quality and greater profit. The cost of a D-D treatment is low . . . returned many times over in higher profit.



Your tractor can be equipped easily for D-D injection.

Make sure you're not sharing your profits with nematodes. Your D-D distributor can provide information regarding D-D and its application to your soil.

Julius Hyman & Company Division

SHELL CHEMICAL CORPORATION

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THIOPHOS® Parathion Insecticides . . . for broad, low-cost protection against more than 100 different insects, on more than 50 different crops.

MALATHON Insecticides . . . have low animal toxicity and control mites, aphids and certain other insects on fruit and vegetable crops.

2. WEED CONTROL

AERO* Cyanate, Weedkiller . . . selective, contact herbicide for killing weeds in onions and other crops.

3. DEFOLIATION

AERO® Cyanamid, Special Grade . . . for defoliation of cotton, soybeans, tomatoes and other crops, as well as killing potato tops to permit earlier, better harvests. Also used as a selective weed-killer in small grains, peas and other crops.

AERO* Sodium Cyanamid, Dust (X-10) . . . for defoliation of cotton in extremely dry areas.

AERO* Sodium Cyanamid, Soluble (X-5) . . . for cotton defoliation where it is desirable to use a spray.

4. FERTILIZATION

AEROPRILLS® Fertilizer Grade Ammonium Nitrate . . . contains 33.5% nitrogen, half in quickly available nitrate form and half in more slowly available ammonia form.

5. FERTILIZATION, WEED CONTROL, DISEASE CONTROL

AERO® Cyanamid, Granular . . . for weed control in tobacco plant beds; for disease (sclerotiniose) control in certain vegetable crops. Ideal for direct application, and to plow down with cover crops and stubble to make humus.

6. SOIL BUILDING

AERO-PHOS® Florida Natural Phosphate . . . replenishes the natural phosphorus reserve in the soil. One application lasts for several years. Low cost; easily applied in any season.

7. RODENT CONTROL

CYANOGAS® A-Dust . . . all-around pest killer for farm and garden. Kills ants, rats and other pests right in their nests or burrows.

8. SOIL CONDITIONING

AEROTIL* Wettable Flakes and Dry Form . . . for improving the structure of soils that tend to cake and crust.

*Trade-mark

WRITE FOR DESCRIPTIVE LITERATURE

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AGRICULTURAL CHEMICALS DIVISION
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BRANCH OFFICES: BREWSTER, FLA. • 3505 N. KIMBALL AVE., CHICAGO 18, ILLINOIS
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P. O. BOX 808, WINCHESTER, VA. • 5025 PATTISON AVE., ST. LOUIS 10, MISSOURI

disperse the clay-humus, or silt particles again.

Such granules held up under plowing and the beating of rain drops with water infiltration in place of runoff and erosion.

Nature Makes Organic Matter

With nature putting back organic matter annually, and with the crops holding the fertility against leaching loss, especially under only moderate rainfall, there resulted the excellent granular structure wherever the original inorganic fertility was high.

It occurred because that fertility had grown the organic matter of such a nature that it made granular structure. Good granular structure of the soil went along naturally with good crop production by those soils under early cultivation.

Destroy Fertility Elements

Now we have taken the fertility elements off the clay and off the farm. We have cultivated so much that we have burned out the organic matter.

Shall we be surprised that there are no natural forces granulating the soil? Shall we be surprised that the clay bakes into big clods?

Conditioners Not Enough

If now we apply an organic chemical compound and one fertility element, like calcium, to get granular structure, we do not put back all the other fertility elements *Nature* had when *She* made granular soils.

Soil conditioners then must go along with all the necessary fertility applications, too, if increased crop production is to be had from the improved granular structure given by chemical soil conditioners.

Nature Knows How

Nature has been in the soil conditioning business for a long time. She does it in more ways than one. Her process has many phases in it.

So don't expect soil conditioners to give you much increased production or to make a *compact* clay become *granular* when you put one of the many new conditioners on it.

These compounds, however, do help to keep the soil granular for considerable time after you work it up into that structure.

Soil conditioners are a new idea that may become a desired practice under some circumstances.

You may want to learn by trials on smaller scales if those circumstances represent your case, and what economic results you get from using these newer soil treatments.—*End.*

CONTROL

Calf Scours!

This combination of 4 effective agents makes control

SAFER...
FASTER...
SURER!

POWDER

KAO-STREP*

DIHYDROSTREPTOMYCIN SULFATE WITH PECTIN, KAOLIN AND ALUMINA

KAO-STREP used as a drench:

1. Gives powerful antibiotic action effective against a wide variety of organisms.
2. Inactivates bacteria and toxins in the intestinal tract.
3. Checks diarrhea.
4. Coats and protect intestinal walls.
5. Reduces loss of fluids.
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Consult your Veterinarian as you would your Physician

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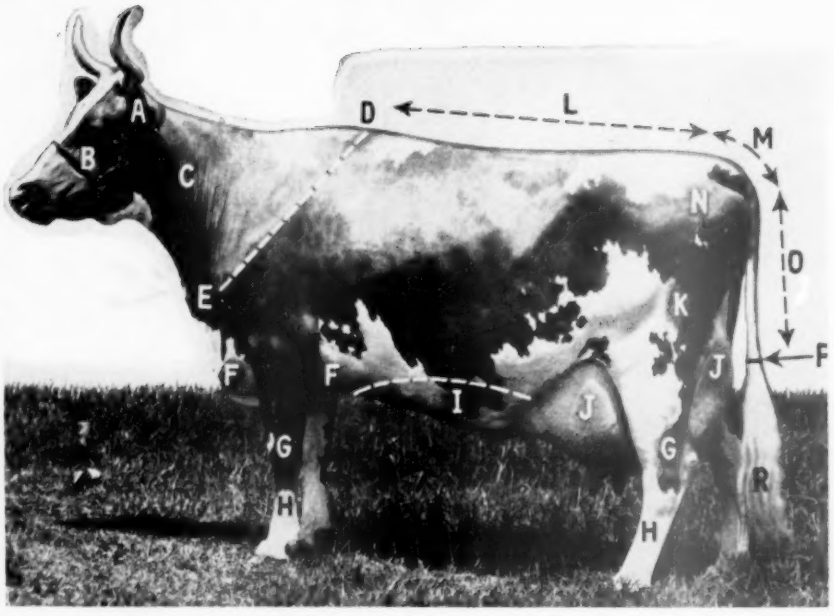


Shown at the right is a handy clipping guide. The points on a dairy cow to be considered in fitting for the showring are lettered. In the following pictures and captions, reference is made to these letters to more fully illustrate the points to follow in clipping dairy cows.

Teach Your 4-H and FFA Youth How to

Clip Dairy Cows for Showing

(Photos courtesy Sunbeam Corporation)

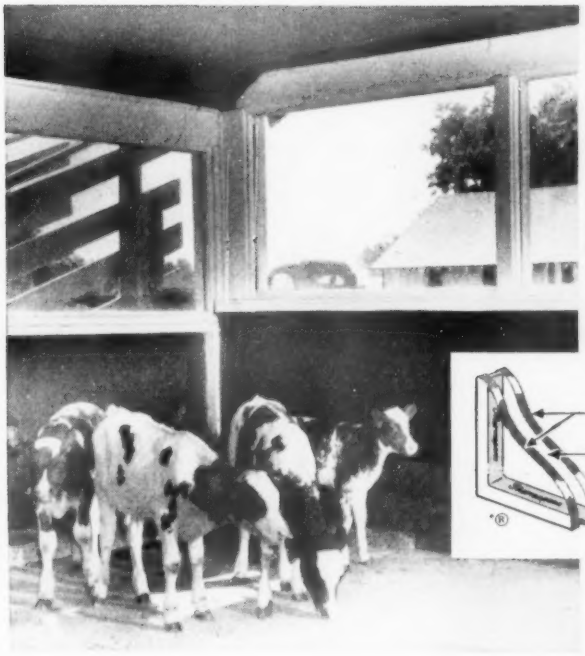
The following pictures show in general how to clip dairy cows. These principles may be applied to all breeds. However, some breed associations may suggest minor variations.

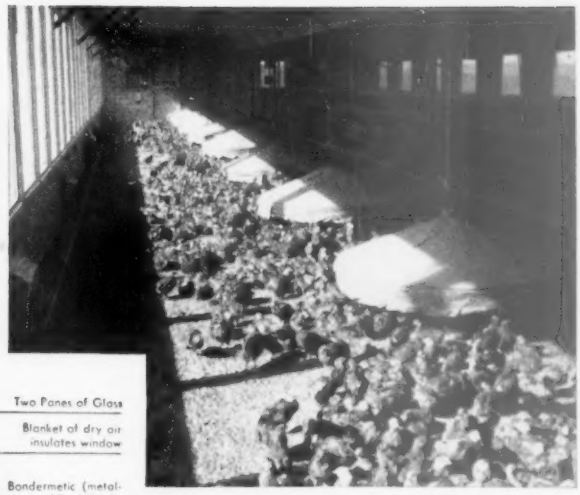
Trim all the hair from inside and outside of ears (A). Also, clip the head (B) to bring out character, expression, and other desirable features.

The neck (C) is usually clipped to make it appear lean. Note the line from D to E to be observed in clipping the neck and withers. Shape the top of withers (D) as nearly as possible to a point.

In clipping along the line from D to E, clip with the lay of the hair. This tends to blend clipped and unclipped areas.

(Continued on following page)





Here's PREVENTIVE MEDICINE that animals go for

Ever notice how animals huddle in a spot of sunshine on cold days? They like its warmth. And perhaps they know it's good for them.

In the October 1952 issue of *Agricultural Engineering*, it was stated by A. H. Groth and Merle L. Esmay: "The newborn of all species of domestic animals are quite susceptible to sudden changes in wet and dry-bulb temperatures and to cold drafts. . . Calves should be in a part of the barn that can be reached by direct sunlight and protected from drafts."

This points out practical values of bringing in sunlight and using insulated windows to *keep* more heat inside and to reduce drafts. Warmer buildings are drier buildings because more moisture is carried off by warmer air. The combination of greater warmth and dryness creates conditions favorable to greater production of meat, milk and eggs.

CUTS MAINTENANCE, TOO. With winter dampness reduced, there's less condensation—less rot or rust. That saves time and money.

How is this all achieved?

1. Big windows facing south bring in winter sun.
2. An overhang shades out the high summer sun.
3. *Thermopane** insulating glass—two panes of glass with dry air hermetically sealed between them. It's the easiest way to insulate windows to keep in more warmth in winter. Sudden cold snaps are less likely to cause trouble. And, of course, it is more comfortable to work in the building. *®

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Thermopane INSULATING GLASS

You can now get Farm *Thermopane* insulating glass for lower cost double glazing of service buildings. *Thermopane* is sold by glass and building supply distributors and dealers. Mail the coupon for full information.

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Please send me a free copy of "Improved Farm Building Daylighting."

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Laboratory farmers work for you

Every modern farmer has "unseen hired hands" at work. They are men you probably never see and seldom hear about. But they work for you, and all farmers, in the agricultural research laboratories of industry, in experiment stations . . . wherever new ideas for agriculture are developed.

For example, in Swift's Plant Food Research Laboratory, there are many such "laboratory farmers." They are chemists, agronomists, soil scientists, and technicians. They know you need the finest plant foods to increase production and to maintain soil fertility. They conduct endless experiments and tests. From their work come new products like PASTURGRO, Swift's plant food for pastures . . . and improvements to Red Steer, BLENN and BRIMM. Their goal is to develop the best possible plant foods to feed the crops of America.

Improvement in plant foods, new high-yielding crop varieties, new power machinery, up-grading of livestock, new methods of land management . . . these are some of the developments which make American agriculture the modern "wonder of the world." They did not come about by chance. These advances are largely the result of the hard work and practical vision of your scientific hired hands—*the laboratory farmers.*

Headquarters for information
In your work, your projects, or on your farm, you may have use for further information on plant foods and their uses. If so, you'll find a visit with your Authorized Swift Agent or dealer worth your while. He either has the information or can get it for you promptly. And if you are ordering Swift's Plant Foods, remember to order them early this season.

Swift's
PLANT FOOD SERVICE
RED STEER

The back of the dairy cow (L) should be clipped straight. Clip the high spots and leave hair in the low spots. Block out tail head (M) by leaving a feather edge shaped to a right angle if possible. Press with fingers on one side running the clipper toward fingers from the opposite side of the tail head. Smooth up the pin bones (N) and clip between them and tail head.

To clip the tail, start the clipper about four fingers from the end of the tail bone. Clip all of the tail (O) from the point (P) which is located four fingers from the end of the tail bone. The switch (R) is washed with soap and water, rinsed, then braided wet the night before showing.

The legs need attention, too. Clip the knees and hocks (G) for refinement to straighten legs and clearly define tendons.

It is a good practice to brush the dairy cow or calf each day. This brings out natural oils and helps make the hair shine. It has a tendency to soften the hide also.

If possible, place a heavy wool blanket under the regular cow blanket used in the show ring. This helps condition the hide and hair but does not take the place of thorough daily grooming.

ASBESTOS SIDING?

3 reasons why you should insist on Johns-Manville SMOOTHGRAIN

1 Superior Styling . . .

Viewed from any angle, Smoothgrain has a rich, grained texture, yet its surface is smooth and resistant to soiling. Colors are beautifully styled in deep autumn shades or smart springtime pastels. The pleasing grained texture and lasting colors are achieved by colored ceramic granules deeply embedded in the asbestos cement siding.

2 Outstanding Quality . . .

The J-M manufacturing process gives Smoothgrain Siding dimensional stability—resistance to shrinking—tight joints that won't open up later on. Furthermore, the built-in texture is so striking, that you can hardly see face nails and vertical joints.

3 Best Known Name . . .

The Johns-Manville name has been the standard of quality for 95 years. Color ads in national magazines and the Bill Henry Radio News Program are constantly building preference for products which carry the J-M name.

For full information **about Smoothgrain Asbestos Siding and other J-M Building products, write Johns-Manville, Box 60, New York 16, N. Y.**

JOHNS MANVILLE JM PRODUCTS **Johns-Manville**

For profitable production of their crops, farmers need

FERTILIZERS containing SOLUBLE MAGNESIUM

Sul-Po-Mag®
Water-Soluble
Double Sulfate of Potash-Magnesia

Growing crops need an adequate supply of magnesium to produce good quality and yield. Here's why.

- Magnesium is the basic metallic element in chlorophyll, the green plant substance which captures the sun's energy that is vital for life and growth.
- Magnesium concentrates in the seed with phosphorus to aid in the formation of oils and proteins required for viable seed.
- Magnesium functions as a carrier of phosphates to the actively growing and fruiting parts of the plant.
- Magnesium is required to activate the processes which stimulate the production and transport of carbohydrates and proteins within the growing plant.
- Magnesium, in sufficient quantities, enables the plant to utilize other plant nutrients for healthy, disease-resistant growth.
- Magnesium stimulates the growth of soil bacteria and increases the nitrogen-fixing power of legumes.

Experience shows that the most effective and economical way to supply the magnesium needed by growing plants is in soluble form in mixed fertilizers. *Sul-Po-Mag* is a properly balanced combination of *sulfate of magnesium* and *sulfate of potash*, water soluble and immediately available to the crop. Leading manufacturers are now including *Sul-Po-Mag* in their mixed fertilizers for the profitable production of a wide variety of crops.

potash division
INTERNATIONAL MINERALS & CHEMICAL CORPORATION
General Offices: 20 North Wacker Drive, Chicago 6

INCREASE CROP QUALITY AND YIELDS
Sul-Po-Mag
FREE
Write for FREE copy of this book

With the County Agents

STATE INFORMATION CHAIRMEN—State county agent association presidents have been cooperating with the NACAA Information committee by assigning a county agent in their state the responsibility of a state information chairmanship. These state chairmen will help gather news items about county agent work in their state for the National Information committee.

State chairmen named to date include: R. H. McDougall, Butler, Pa.; O. F. Baca, Las Vegas, N. Mex.; Wilbur T. Brettell, Cheyenne, Wyo.; J. H. Hopkins, Anderson, S. C.; D. F. Bredthauer, Refugio, Tex.; Myrl Gray, Okemah, Okla.; and Harmon Bond, Elk Point, S. D.

WEIGLE REPORTS ON IRAQ CONFERENCE—E. J. Weigle, former county agent in Iowa and now on the Point Four program at Basra, Iraq, reports the first National Extension conference held in Baghdad January 2-4. Dr. Dhia Ahined, Iraq; Marion Olson, former Iowa county agent; Henry K. Botch and John H. Mikkelson, former Montana county agents; and Weigle were present.

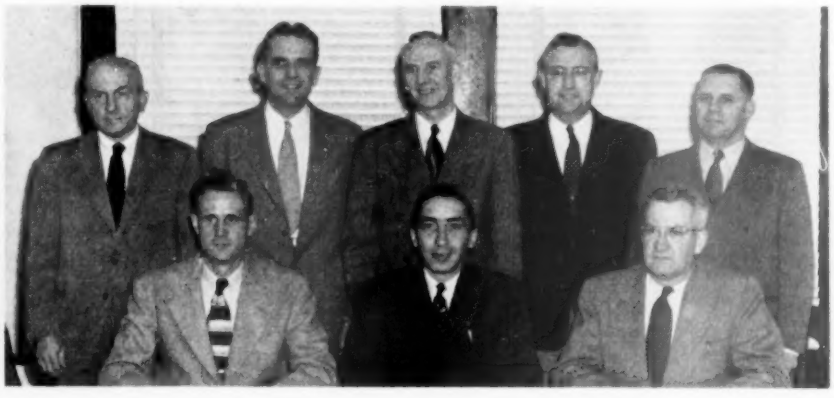
ALABAMA LISTS STATE COMMITTEES—J. E. Morriss, president of the Alabama County Agents association, sent in a list of the Alabama association committees and their chairmen.

We are listing them here in case that corresponding state chairmen care to contact them.

President: J. E. Morriss, Wetumpka; *Vice President:* C. P. Granade, Greenville; *Secretary:* B. R. Holstun, Tuscaloosa; *Directors:* J. J. Young, Center; R. E. Martin, Andalusia; J. C. Bullington, Jasper; and W. B. Story, Livingston.

Agricultural Planning—J. W. Pate, Fort Payne; *County Agents Supplies and Services*—W. H. Taylor, Opelika; *Distinguished Service*—L. T. Wagnon, Hartsells; *Farm Finance and Marketing*—O. C. Helms, Grove Hill; *Public Relations and Information*—A. S. Mathews, Jr., Anniston; *Research and Land Grant Colleges*—F. N. Farrington, Dadeville; *USDA Coordination and Relations*—F. M. Jones, Linden; *Professional Improvement*—Hoyt Warren, Abbeville; *Retirement*—George H. Gibson, Birmingham; *Youth*—Bob I. Bright, Montgomery; *Membership*—B. R. Holstun, Tuscaloosa.

SEVERAL STATES ELECT OFFICERS—New officers of the Pennsylvania County Agents Association for 1953, elected at their annual meeting, are Paul N. Reber, Towanda, president; William A. Ross, Smethport, vice president; and J. D. Hutchison, Wilkes-Barre, secretary. New directors are Charles P.



These are the newly elected officers of the New York State Association of County Agricultural Agents. Left to right, seated, W. M. Barry, secretary-treasurer; Roger W. Cramer, president; and H. W. Mattot, vice president. Standing, Directors A. R. Blanchard, R. G. Parker, N. F. Mansfield, R. M. Cary, and H. T. Huckle.

NOW—INSURE AGAINST BOTH SOIL INSECTS • SEED DISEASES WITH ONE PRODUCT

In one easy operation you can now increase your crop yields by protecting against wireworms, seed corn maggots, seed rot and damping-off diseases. ORTHO Seed Guard assures you top germination—good paying stand.

ORTHO Seed Guard is an insecticide-fungicide combination containing ISOTOX (Lindane) and ORTHOCIDE (Captan) for protection of corn, grain, cotton, vegetable, legume, soy-bean and many other seeds before planting.

More Effective 2-Way Protection

Field tests have proved that a combination insecticide-fungicide gives seed protection that is more dependable and more effective than *either* material used alone.

More yields per acre

ORTHO®

World leader in scientific pest control

ORTHO Seed Guard provides a smooth chemical coating that sticks to the seed—does not harm seed or soil but serves as protection against soil insects and seed and seedling diseases.

Economical

Only 1½ oz. per bushel of seed required for treatment. Saves planting extra seed; saves late and expensive replanting.

Easy To Use

Merely measure out directed amount and mix with seed in barrel, tub or any convenient container.

Safe and Compatible

ORTHO Seed Guard has proved to be non-injurious to seeds or seedlings on a great variety of crops. Chemically compatible with many other insecticides and fungicides.

For more information on how ORTHO can boost your crop profits call your ORTHO fieldman or dealer or write:

CALIFORNIA SPRAY-CHEMICAL Corp.

Fennville, Michigan
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Medina, New York
Caldwell, Idaho
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Other offices throughout the U.S.A.

T.M.'S REG. U. S. PAT. OFF.: ORTHO, ORTHOCIDE, ISOTOX

New Idea No. 40, Semi-Mounted Mower. Retractable rollers take lift and strain out of hitching and moving. Multiple-hole hitch plate has 3 up and down positions. Eccentric cam to lock pitman straps. Spring balanced lift for raising cutter bar.

This mower talks . . . listen

Machines talk to those who know the language. An expert mechanic, listening to an engine, can tell you in a few minutes whether it's a "sweet-running," precision-built machine . . . or just another engine.

When it comes to mowers, you're the expert. You know mowers, you grew up with them. You know it takes a tough frame, proper alignment, close tolerances to stand up under hundreds of acres of heavy punishment.

Listen to a NEW IDEA Mower. It *sounds* solid. It *sounds* sharp, smooth, strong. Like any expert, your eyes help your ears. You see how a NEW IDEA Mower hitches and unhitches quickly, easily . . . cuts clean on square corners, without strain on power drive. You see that it tracks straight and true . . . cuts cleanly through thickest, toughest hay, acre after acre.

To what you see and hear, add the fact that NEW IDEA has a history of making rugged, durable machines. You'll know why thousands of farmers, who own NEW IDEA Mowers, say that a NEW IDEA is a *good* idea.

New Idea No. 30-AH Trailer Mower. "Easy on-easy off." Gears run in oil bath. Crankshaft mounted on tapered roller bearings. Hydraulic control or mechanical lift. Equalizer arm takes strain off universal joints on sharp turns.

NEW IDEA FARM EQUIPMENT CO. DIVISION AVCO DISTRIBUTING CORPORATION

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Mail coupon today for free folders

Send free folders as checked:

- ☐ Tractor Mowers
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Name_____

Address_____

Fague, Chambersburg, and James F. Haldeman, Norristown.

County agents in New Mexico selected W. Foster Zimmerman, Union county, president; Abad Martinez, Taos county, first vice president; Ben Fritz, De Baca county, second vice president; and T. C. Perkins, Lea county, secretary-treasurer.

Willard Rumburg, St. Francois county, Farmington, Mo., was elected president of the Missouri County Agents Association.

Other officers elected were Virgil Sapp, Jasper county, Carthage, vice president, and Parker Rogers, Lafayette county, Higginsville, secretary-treasurer.

New officers of the South Dakota County Agents' association include Vane Miller, Hamlin county, secretary-treasurer; Alvar Aho, Brookings county, vice president; Laurel Howe, Charles Mix county, Sergeant-at-Arms; and Kenneth Ostroot, Lincoln county, president. The men were elected to office at the meeting of the association held recently in connection with the annual conference of the South Dakota state college extension service.

VERMONT AGENT RETIRES—Frank Jones, Lamoille county, Vermont, agent for 35 years, retired recently.

He was first appointed to the Vermont agricultural extension service in 1917 as an emergency demonstration agent. His title was changed next year to county agent for Lamoille county.

★

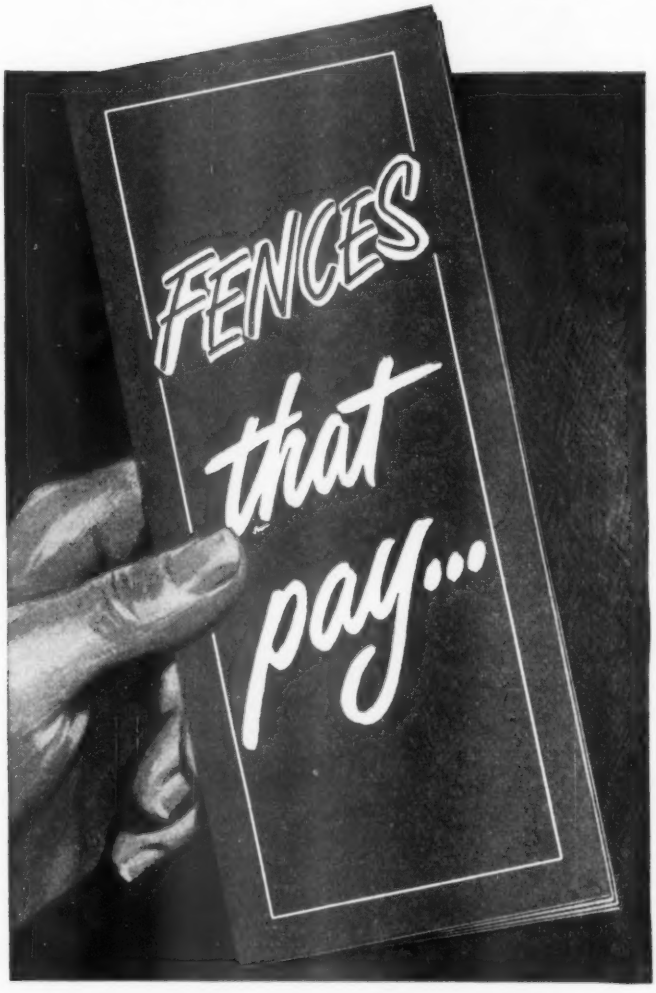
Free Films Available

Agricultural leaders that are interested in obtaining many films free of charge on various subjects, both directly and indirectly related to agriculture, can write to Association Films, Inc., 347 Madison Ave., New York 17, N. Y.

One of their recent releases is "Metallurgy in Miniature." This shows how scientists work to create the special alloys used in fine watches.

New *FREE* guide tells approved methods of fence construction

Copies available in quantity for your use



● Here's the information farmers need to put up fences that are real assets to their farms and to their farming operations. It's a new illustrated guide that describes in detail approved methods of fence construction using pressure-creosoted wood posts as recommended by leading agricultural authorities.

It contains the answers to such problems as fencing on contours . . . corner construction . . . and fence stretching. It also tells of the value of fence as an aid to efficient farm production.

By following the methods recommended in this guide, fence will give years' longer service; and when wood posts are used, they will last much longer if *pressure-creosoted* with U·S·S Creosote Oil. U·S·S Creosote Oil — a product of United States Steel — is used by many leading pressure-treating plants. You know that a quality product has been used when posts are pressure-creosoted with U·S·S Creosote Oil.

Pressure-creosoted posts are the most economical wood posts

Pressure-creosoted posts are the manufactured products of modern pressure-treating plants. The right amount of Creosote Oil is *forced* into the wood to protect it against termites, fungi and dry rot. The posts last longer and farmers save money *three ways:*

1. **Save on labor**—Every post replacement thus avoided saves time for productive jobs. And pressure-creosoted posts are straight, smooth and easy to set.
2. **Save on replacements**—Instead of having to replace untreated posts many times over a period of years, one pressure-creosoted post will do the job.
3. **Save on fence**—Down fence often means ruined fence and early replacement. Pressure-creosoted posts help prevent this loss.

MAIL THE COUPON TODAY!

You will receive a sample copy of this new guide. If, after examining it, you would like additional copies for educational programs, they will be supplied without charge. Ask your fence or lumber dealer for information about pressure-creosoted wood posts. If he does not have them in stock, have him write us. We'll put him in touch with suppliers.

Agricultural Extension Section,
United States Steel Corporation
Room 2809-W, 525 William Penn Place,
Pittsburgh 30, Pa.

☐ Please send me your new guide, "Fences That Pay."

☐ Also, I would like to know the name of my nearest pressure-creosoted fence post dealer. No obligation, of course.

Name .....

Address ..... Town .....

County ..... State .....

USS

UNITED STATES STEEL

Some Facts for Ag Leaders on . . .

ANTIBIOTICS

and their use in hog production

By Ben Sheffy
Cornell University

● THE VALUE OF antibiotics in swine nutrition has been repeatedly demonstrated not only by commercial laboratories and experiment stations but by swine producers themselves.

Recently there has been a tendency for many to feel that antibiotics need be fed to swine of all ages under all conditions. This is not necessarily true.

Furthermore, at no time since before World War II has there been as great a need to stress efficiency in swine production as there is at present. With corn-hog ratios teetering around 1 to 10, none of us can afford to make any additions to our swine rations unless these additions will result in productivity over and above the additional cost of the supplements.

Therefore, it is well at this time that we review the role of antibiotics in a practical swine producer's program.

What Are Antibiotics?

Antibiotics are chemical compounds synthesized by certain micro-organisms in the routine process of their growth. They are not nutrients and are not required by the pigs as such.

They are destroyers of both disease and non-disease producing organisms. Not all the organisms are affected nor are the different antibiotics which can be used equally effective in hog raising.

It is not known at present just how antibiotics function. Generally it is believed that they exert their effect either *directly*, by controlling or destroying pathogenic or infectious organisms both in the gut and in the blood stream, or *indirectly* by their effect on the nutritionally important microflora of the digestive tract.

This in part helps to explain why we can expect the most beneficial effects: (a) Early in life during the pigs' most critical stages; (b) when the environment is such that disease levels are high; and (c) when a nutritionally marginal ration is being fed.

No One Superior

There is no one best antibiotic. Aureomycin, terramycin, and penicillin have been more effective than others and are equally effective.

The above mentioned conditions dictate the levels needed. Under average conditions five milligrams of antibiotic activity per pound of ration consumed or 10 grams per ton give good results.

The majority of antibiotics fed to swine at present are fed to pigs from the time of weaning to market weight.

A good hog production system still requires a strict sanitation program, good management and breeding, feeding balanced rations, and proper disease control. On the average farm, the sow, too, will continue to play an important role. Photo Kraft Foods Company.

Research work has indicated that under average feed lot conditions, using average Corn Belt rations, swinemen can expect 5 to 15 percent faster gains when the rations are properly supplemented. Feed consumption will almost always be increased and in most instances feed efficiency will also be increased.

Less Feed Required

On the average about 4 to 5 percent less feed has been required when antibiotics have been fed. Responses occur when hogs are on pasture as well as in dry lot. Responses can be obtained even with the best balanced rations. The latter responses are not as marked, however.

Robust healthy pigs raised under sufficiently disease-free conditions, fed balanced rations, do not respond significantly to antibiotic treatment.

It appears therefore that much of the benefit from the feeding of antibiotics when fed along with a good ration is due to the fact that it successfully combats the low grade infections that plague a high percentage of our swine herds.

No Carry-Over Effect

Despite the fact that the most beneficial results from antibiotic supplementation occur before 125 pounds, experimental findings indicate that antibiotics have no carry-over effect. They should be fed throughout the growing-fattening period for maximum growth responses.

Effect on Carcass Quality

At present there is considerable controversy regarding the effect of antibiotics on carcass quality of swine. Some research workers definitely find antibiotic-fed pigs fatter, while others find no significant differences.

It would appear logical that where antibiotics increase feed consumption particularly after the 125 pound period it would tend to stimulate full feeding conditions as contrasted with limited feeding. There is no question that full

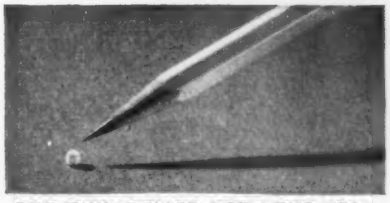
When Farmers Ask You About

Bacigro

BE READY WITH THE ANSWERS!

Here's what every Agricultural Leader should know about the

NEW ANTIBIOTIC GROWTH PELLET FOR NEW-BORN PIGS



ONE TINY PELLET DOES THE JOB!

That's right, just one pellet the size you see above gets baby pigs off to a flying start. The advantages are maintained from birth through weaning and to market, under farm conditions. Each pellet contains 1,000 units of pure bacitracin, outstanding antibiotic developed by Commercial Solvents Corporation and widely used in many livestock feeds for greater weight gains and improved feed efficiency. For best results in growing pigs, antibiotics should be used in the starter feed and in the hog supplement.

THE PELLET GOES HERE—

Bacigro is implanted just under the skin behind the ear of new-born pigs. One pellet does it. This new, practical, low-cost method of providing antibiotic growth stimulation is called "Bacination". Bacigro provides bacitracin by direct absorption for outstanding extra-pound gains. Bacigro is effective—it provides a boost before the pigs begin to eat grain and the pig that is heaviest at weaning is likely to be the first one ready for market.

EXTRA WEIGHT GAINS CARRY THRU TO MARKET—

When Bacigro goes to work on litters, you can expect extra weight increases of over 11% at weaning time! This sort of gain has been consistently proved by work done with pigs raised on pasture, by the University of Arkansas, by CSC's own experimental farm at Terre Haute, Indiana, and by practical farmers. The increase in growth response at weaning carries through and produces, by actual test, more than 13 pounds extra weight per pig when marketed.

YOU CAN'T BEAT A SOW & BACIGRO

No change in management; no change in feeding methods. Just "bacinate" once with Bacigro. Bacigro pellets provide the growth-stimulating antibiotic, bacitracin, while the baby pigs are thriving on sow's milk, and under her care in the tried and true natural way. You can't beat a sow and Bacigro! And for 3 nickels, *you can't afford not to invest* in this kind of effective insurance on your spring pig litters.

LOOK AT THESE BIG BACIGRO BABIES!

They weren't just grown—they were Bacigrown! Farmers make full use of the sow and at the same time get essential antibiotic into their pigs. Simple as abc, implanting the pellet is quick, easy, and sure with the specially designed Bacinator. Inexpensive—only one pellet per pig at a cost of 1½¢. Bacigro and the Bacinator are now available through veterinarians and at leading feed and drug stores as well.

WHAT ABOUT SCOURS AND MORTALITY?—

Reports from the field indicate that the use of Bacigro pellets may be of value in increasing livability of baby pigs and of reducing the incidence of non-specific diarrheas due to low grade infections susceptible to bacitracin usually found under poor to sanitary conditions. Controlled scientific experiments have not been conducted because it is difficult to duplicate or simulate farm conditions under experimental procedures. Bacigro pellets must not be considered as a substitute for good management and sanitation.

tell 'em about Bacigro for the lowest-cost gains their pigs can make!

CSC
COMMERCIAL SOLVENTS CORPORATION

105 SOUTH 7TH STREET, TERRE HAUTE, INDIANA

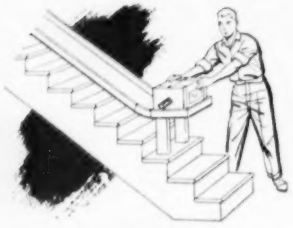
CSC SERVES AGRICULTURE *with Vitamin and Antibiotic Feed Supplements for Poultry and Livestock . . . with Nitrogen Fertilizer Materials . . . with Insecticide Materials . . . with Veterinary Products . . . with* PEAK® *and* NOR'WAY® *Anti-freeze . . . with Paint Ingredients and many others.*

CSC BUYS FROM THE FARMER *such commodities essential to CSC's production as corn, wheat, barley, rye, soybeans, and milk products.*

GET THIS FARM FIX-UP BOOK FREE!

Masonite's new book is chock-full of helpful ideas for better farming! You can build any of the low-cost items with ordinary carpentry tools in a few hours of spare time.

Helpful Ideas for better farming!

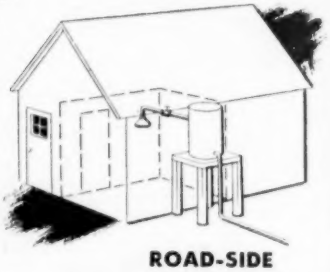


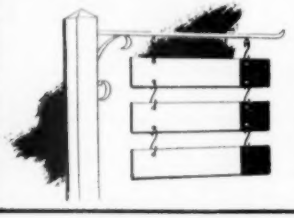
CHUTE FOR CASE GOODS

Egg cases, boxes, bales are quickly moved from upper to lower floor on a grainless Tempered Presdwood chute. Saves time. Can be built in a few hours.

WASH-UP HOUSE

A partition of moisture-resistant Tempered Presdwood panels closes off this handy place for showering and changing from work clothes. The shower is made from hogshead barrel and piping.





ROAD-SIDE CHAIN SIGN

3/16" Tempered Duolux (a Presdwood product), smooth on both sides, is ideal material for this sturdy produce sign. Slate painted sections at right are for prices written in chalk.

MASONITE® TEMPERED PRESDWOOD®...

THE WONDERWOOD OF 1000 USES about the farm. Resists moisture permanently... out-weathers the weather! Get acquainted with these large, hardboard panels of wood-made-better. Presdwood will never rot, split, or splinter. Easy to cut, nail and paint.

Test it yourself. Send for free sample.

MASONITE® CORPORATION

Dept. BFM-3, Box 777, Chicago 90, Illinois

"Masonite" signifies that Masonite Corporation is the source of the product

Please send my copy of your Farm Fix-up Book and sample of Tempered Presdwood.

Name.....

Address.....*R.R.*.....

Town.....*County*.....*State*.....

feeding vs. limited feeding results in fatter carcasses.

Work underway at present will clarify this point.

Recently a tremendous amount of emphasis has been put on the suckling period. Rightly so, because here has been and still is the big bottleneck in efficient pork production. We have but to point to the high death losses and the runts which result to realize the inadequacy of the present situation.

The value of antibiotics for baby pigs has been clearly demonstrated under laboratory conditions.

A practical means of getting antibiotics into baby pigs at an early age is keenly needed. Several methods have been introduced.

The first and most practical is that of supplying the litters with a palatable creep feed highly fortified with antibiotics. Unfortunately, pigs on a sow that is lactating heavily will eat little or no creep feed until they are two to four weeks of age.

Synthetic milk has received wide promotion. Baby pigs can be successfully raised on it. But it is not for the careless farmer. Care and skill are important. Photo courtesy Chas. Pfizer & Company.

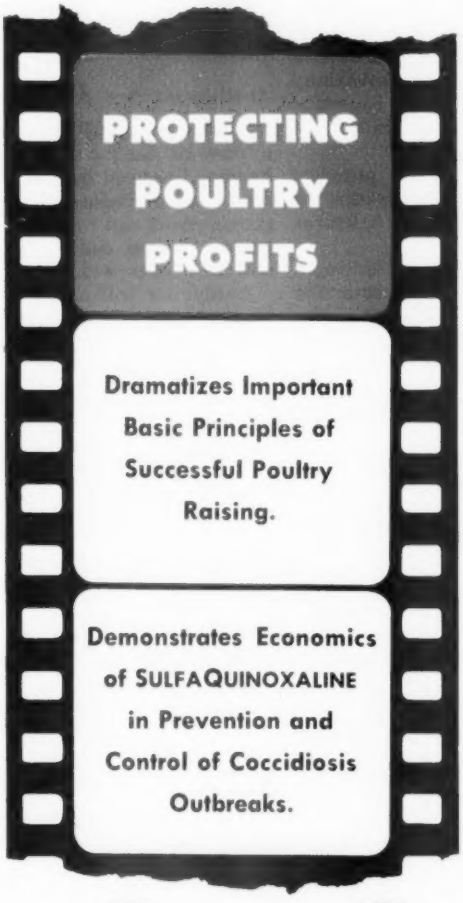
In spite of this, however, supplementation of creep rations is a sound practice and is to be recommended to the average producer, since it results in heavier and more uniform litters at weaning time.

Synthetic Milk Developed

More recently swinemen have been bombarded with information explaining the panaceas of "synthetic milks" as a practical means of administering antibiotics to pigs from the tender age of two days to early weaning. I need not mention here the tremendous possibilities "synthetic milks" offer the swine industry.

Unfortunately, because of its uniqueness and tremendous appeal this method of raising baby pigs has received undue emphasis. There is no question that

NEW MOVIE helps farmers boost their poultry profits


PROTECTING
POULTRY
PROFITS
Dramatizes Important Basic Principles of Successful Poultry Raising.
Demonstrates Economics of SULFAQUINOXALINE in Prevention and Control of Coccidiosis Outbreaks.

Merck's 16-mm. color and sound film—a must for showing to poultry men—is available now to county agents, extension specialists, 4H groups, and agricultural leaders.

The new Merck movie, titled *Protecting Poultry Profits*, fulfills a longfelt need for graphic and easily understood information on coccidiosis. This new film approaches the problem from the standpoint of efficient management practices. It emphasizes what experiment-station workers, extension specialists, and county agents always have taught: *that prevention of coccidiosis outbreaks requires not only an effective coccidiostat, but also sound management and good sanitation.*

With animated diagrams and color close-ups of autopsies, the movie shows clearly how coccidia attack poultry. *Protecting Poultry Profits* was designed to help poultry men. It should impress growers with proved methods for increasing profits.

For details on how a print of this new movie may be reserved by industrial, farm, or educational groups, fill in and mail the coupon below.

SULFAQUINOXALINE

PROTECTS POULTRY PROFITS

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

MERCK & CO., INC., Rahway, New Jersey, Dept. 7-11
I desire to borrow the Merck film titled *Protecting Poultry Profits* for these dates (Name two alternatives):

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NEW WEED

ROTO-GRIPS

ALL-SEASON, ALL-JOB FARM TRACTOR CHAINS

● Swivel-ended, case-hardened cross chains are teamed up with massive non-kinking side chains to produce the tractor tire chains farmers demanded—the new all-purpose WEED ROTO-GRIP. Here are a few reasons why ROTO-GRIPS get farmers into the fields earlier in the spring—permit them to work later in the fall:

Constant traction on mud, snow, ice or frozen ground—cross chains roll to crown of tread, stand out sharply, add traction where tire grips best.

One chain for every job—plowing under slippery cover crops, moving equipment from muddy fields, clearing snow from lanes and driveways, etc.

No balling or tightening on the tire—self-cleaning.

Easy to put on—flexible, easy to handle—no adjusters or tighteners needed.

ACCO
AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

WEED FARM TRACTOR CHAINS

pigs can be successfully raised this way.

The "synthetic system" is not for the mediocre operator. Care and skill are paramount. More equipment and warmer draft-free barns are necessary. There is always the cost of the synthetic milk itself to consider.

It is questionable whether present hog prices would warrant a switch to two-day weaning at this time.

Disease A Possibility

One very important practical consideration in this system of production is the possibility of disease. Transmissible gastro-enteritis (TGE), the so-called infectious scours, has for years been a heavy killer of baby pigs. Antibiotics have little or no effect on the course of action of TGE. Breaks occur in spite of exacting sanitation procedures.

The latest in the proposed practical means of antibiotics administration to baby pigs is suggested by the Arkansas workers.

Their method consists of implanting a small antibiotic pellet underneath the loose skin just behind the ear of the baby pig at two days of age. The pigs are kept with the sow just as in normal production. Results of this practice indicate an 11 percent increase in weaning weight.

This approach to the problem has the advantage of not upsetting our present methods of baby pig production. However, more work must be done along this line before positive recommendations for its widespread use can be made.

Antibiotics for Gestation

There is at present some controversy regarding the advisability of feeding antibiotics to brood sows. Early work showed rather conclusively that antibiotics fed during gestation have no beneficial effect on size of litter, or the strength and weight of the pigs at birth.

However, antibiotics fed to sows during lactation, when you supply no antibiotics in a creep feed for the baby pigs or where they disregard the creep and eat considerable amounts of the sow's feed, may result in increased weaning weights in their litters.

This increased weight, however, is due to the antibiotic intake of the baby pig via the sow's feed consumed directly and not due to antibiotics passed on into the milk. Some of the antibiotics fed the sow can be detected in the sow's milk but the amounts found after normal supplementation are too low to be of benefit to the suckling pig.

Thus, until research indicates otherwise, there is not much point in feeding antibiotics to your brood sows.

Antibiotics Not A Cure-All

The use of antibiotic supplements is not a "cure all" for the swinemen's problems. Feeding balanced rations, following strict sanitation procedures, employing sound management and breeding practices and proper disease control is as important now as it ever was.

Antibiotics will never replace anyone of our presently sound and constructive swine production practices.—*End.*

★

Helpful Booklets

Here are three booklets that may be of help to you in your work with farm people.

They are "Common Calf Troubles," "Rats and Mice," and "Mastitis Prevention and Control" and are available from Dr. Hess & Clark, Inc., Ashland, O.

All of them contain helpful information that will be of interest to you and your farm people.

★

Book On Livestock Diseases

A definite and constructive step forward to lessen losses due to farm animal disease and to increase production of eggs, meat, milk, and poultry has been taken by the recent publication of an authoritative, comprehensive guide to disease prevention and control.

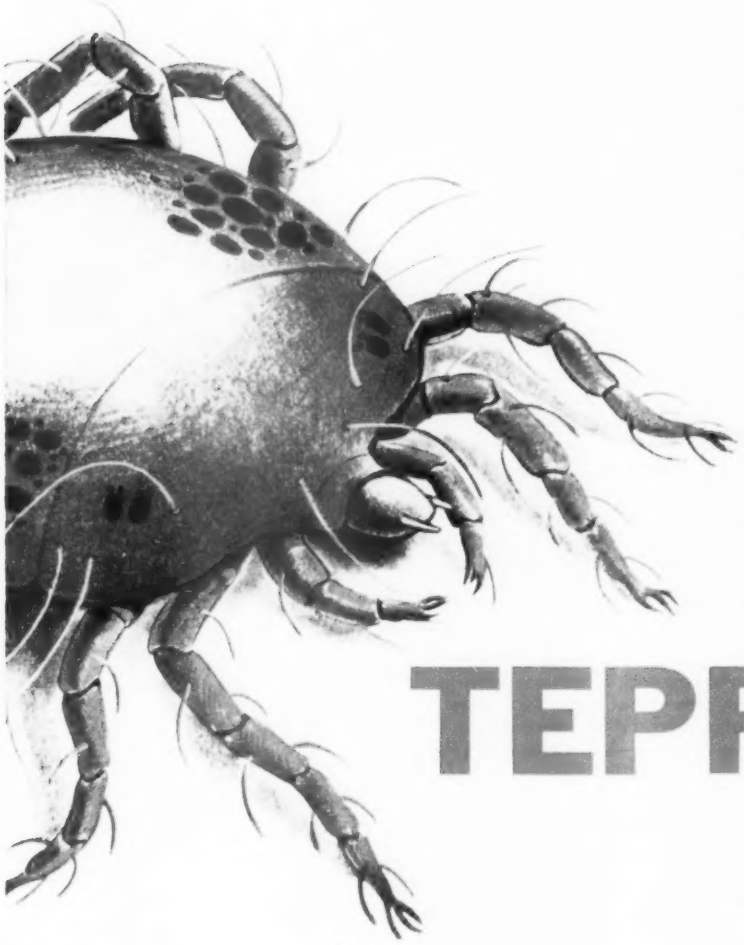
This consists of a series of 12 separate, coordinated books allied together in one binder entitled "How To Detect and Prevent Diseases of Poultry and Livestock." Individual treatment is given such subjects as Disease Fundamentals, Poultry Diseases, Digestive and Respiratory Diseases of Cattle, Care of Swine, Horses and Mules, Dogs, Cats, and Rabbits. Also stressed is the importance of good husbandry, proper sanitation, good breeding, and judging of poultry and livestock.

This new guide is published by Simmonds & Simmonds, Inc., 201 North Wells St., Chicago 6, Ill., who will be glad to send full details upon request.

"Oh! Does that mean he's married!"

use TEPP* for low-cost effective control of

red spider mites
aphids
flea beetles
thrips
leafhopper nymphs
cabbage caterpillar
AND MANY OTHER PESTS



Some users are saving from ⅓ to ½ of the cost of insecticides and insecticide application by using TEPP exclusively. With efficient TEPP, fewer applications are needed and crop losses are reduced to a minimum.

Another big advantage of TEPP is that it kills pests but leaves no poisonous residue. Farmers spray one day and harvest poison-free crops 48 hours later! Swift-acting, powerful TEPP stops those last-minute infestations that can devastate a fine crop.

TEPP is available 1) as a liquid concentrate, 2) as a stabilized dust, and 3) combined with other active ingredients. For quick kills and cleaner crops, specify TEPP formulations from your supplier.

TEPP*

means pest-free crops

poison-free crops

*Tetraethyl Pyrophosphate is made from triethyl Phosphate—an Eastman chemical. TEPP is not made by Eastman. For the names of manufacturers of TEPP, write to Eastman Chemical Products, Inc., Chemicals Division, Kingsport, Tennessee.

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CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE

Sales representative for **TENNESSEE EASTMAN COMPANY**, division of **EASTMAN KODAK COMPANY**

FARM EXPERT

George Haefner

broadcasting farm news and advice over Radio Station WHAM, Rochester

SAYS...

For Bigger Livestock Profits

FEED STERLING TRACE-MINERAL BLUSALT

"Throughout the country, local feed often lacks essential minerals. To get the most from your farm animals, supplement their diet with STERLING Trace-Mineral BLUSALT."

Field reports show that farm animals produce better, grow bigger faster, bring you greater profits when they're fed Blusalt. Sterling Blusalt provides vital salt to aid digestion of protein, carbohydrates and fats *plus* these trace minerals. **Cobalt** – essential for Vitamin B_{12} which prevents loss of appetite, permits maximum body gains and helps maintain normal level of hemoglobin in the blood. **Manganese** – necessary for successful growth, reproduction, lactation and bone development. **Iodine** – to help prevent simple goiter. **Iron** – essential as part of hemoglobin to every organ and tissue. **Copper** – necessary with iron for hemoglobin formation. **Zinc** – growth producing and a part of enzymes.

KEEP BLUSALT BEFORE YOUR ANIMALS AT ALL TIMES – AND MIX WITH FEED ACCORDING TO DIRECTIONS ON THE BAG.

Feed STERLING TRACE-MINERAL BLUSALT

100-lb. bags
50-lb. blocks
4-lb. liks

International Salt Co., Inc.
Scranton, Pa.

What's New In . . .

Swine Husbandry

By ARTHUR L. ANDERSON
Iowa State College

● OPINIONS VARY as to the profitableness of the hog enterprises for this year. Hog numbers are down so hog prices should be favorable to the raisers.

Hogs should gain in mortgage paying strength in '53. Yet with the possibility of higher feed costs, we will have to use all of the new knowledge available to make our pigs pay.

One of our greatest leaks in efficient hog raising is in the death loss of young pigs. By the use of farrowing crates and electric brooders farmers are saving more pigs per sow farrowing.

In the spring of 1952, farmers raised 6.65 pigs per sow, yet the 25 master hog producers of Iowa for the same year raised and marketed litters of 9.48 pigs per sow. These high ranking pig raisers lost only 11 percent of the pigs farrowed.

Experiment on Feeding

The recent Minnesota experiment has raised the question as to whether heavy feeding of breeding gilts is economical. Gilts fed a rather liberal ration from a weight of 120 pounds to 410 pounds at farrowing time some eight months later, out-gained a comparable limited fed group by 125 pounds and farrowed nearly one and one-half more pigs per litter.

However, each well-fed gilt consumed 856 pounds more concentrated feed. With feed costs higher than usual, the level of feeding breeding gilts may be a consideration in hog profits.

It is probable, too, that less than full feeding may at times be advisable for market pigs, particularly if carcass quality is a consideration.

In a trial at Tennessee, pigs fed on 80 percent full-fed ration had higher quality carcasses because of less back fat and higher percent of lean cuts than full-fed pigs. At the 60 percent levels of feeding the carcasses were somewhat lacking in quality.

New Management System

With the availability of commercial sow's milk substitutes, many new possibilities in management have arisen.

By the proper use of such substitutes it is possible to have heavier pigs at weaning time than with the usual method and also to raise a larger litter. With a shorter suckling period sows can be rebred or sold sooner after farrowing.

Success with the substitutes requires considerable attention to maintain dry, sanitary conditions as well as to provide the proper temperature.

Use Pig Starters

Since the milk solid supplements are not inexpensive, the use of the pig starters is imperative for lower total costs of pig raising.

Rather complex palatable pig starters, including all the dietary essentials, are indicated. Such feeds cater to the sweet tooth of the pigs and contain at least 5 percent of sugar.

Certain antibiotics have proven their worth in pig starting ration. Also, in some instances, but not all, antibiotic pellet implantation in young pigs has been beneficial.

Protein Level Down

In general, the recommended levels of protein for swine rations have been scaled downward in the light of rather extensive trials in which the rations fed were more complete nutritionally than those used in protein level trials of the 1930's. It is quite obvious that it is possible to get by with a lower protein level, when all other essentials are included in the ration.

Self feeding free choice style has always been popular when the basal feed was corn. Self feeding the entire ration and adjusting the protein levels to the pig's needs is becoming more extensively used even though costs are increased by grinding and mixing.

When corn is not moldy or lacking in palatability, the self feeding separately usually gives good results.

For the most part, beneficial results have attended the use of some of the antibiotics for growing and fattening pigs. In some cases they have been advantageous in rations for sows.

Study Fat Problem

The various experiments concerning the relation of back fat thickness to the feeding of antibiotics have failed to give an unqualified answer.

Some investigations indicate an increase in back fat thickness while others indicate little or no positive effect. In fact, one investigator is on record as indicating that under certain circumstances less fat back may be produced by proper antibiotic feeding.

The arsonic compounds have given

DEFEAT HOG CHOLERA

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NO CHANGE IN FEEDS • NO AFTER-CARE

Safe on Pigs . . . even before weaning

TRUE-VAC administered with the SAFETY-SERUM BALANCER offers a new safe means of providing solid immunity protecting pigs from nursing age to market pens.

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Anchor dealers everywhere are stocked with a fresh supply of this remarkable new vaccine.

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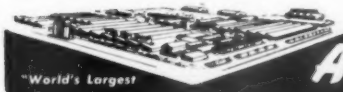

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Please send me a copy of your brand new TRUE-VAC booklet for real hog cholera protection at a savings.

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Phillips 66

NITROGEN Grows more Corn and Small Grains

Next to moisture, nitrogen is the biggest factor influencing grain yields. In fact, tests show that the soil gives up 150 pounds of nitrogen for every 100 bushels of corn produced. And one pound of nitrogen is removed from the soil for every bushel of wheat grown. This nitrogen must be replaced to maintain soil fertility and to produce larger, healthier yields of succeeding crops.

As an agricultural advisor, you can help your farmers grow more grain per acre by recommending the use of adequate amounts of nitrogen fertilizer at the proper time, plus phosphate and potash as soil tests and crop history indicate the need.

Phillips Chemical Company produces three high nitrogen fertilizers for direct agricultural use—agricultural ammonia (82% N), ammonium nitrate (33% N), and ammonium sulfate (21% N).

PHILLIPS CHEMICAL COMPANY
A Subsidiary of Phillips Petroleum Company
Bartlesville, Oklahoma

Phillips 66 High Nitrogen Fertilizers
Phillips 66 Ammonium Sulfate and Prilled Ammonium Nitrate are free-flowing, easy to spread or drill. Phillips also produces Agricultural Ammonia (82% Nitrogen) for direct or irrigation application.
AGRICULTURAL AMMONIA
NITROGEN 82%
AMMONIUM SULFATE FERTILIZER GUARANTEED ANALYSIS NITROGEN 21% 100 LBS. NET
PHILLIPS CHEMICAL COMPANY
NITROGEN 21%
PRILLED AMMONIUM NITRATE FERTILIZER
NITROGEN 33%

variable results in swine feeding trials. In some instances the arsenicals increase gains and improve feed conversion efficiency, apparently by control of some diseases, particularly swine dysentery.

The organic arsenical compounds are non-toxic for animals when fed within prescribed limits which is usually about 90 grams of arsonilic acid plus 2 grams of antibiotic per ton of total ration.

Detergents Useful?

Detergents or surfactants are considered as drugs. There are many hundreds of potentially applicable compounds. Some preliminary investigations appear to indicate that under some circumstances they may stimulate growth of swine.

Many supplemental feeds are available to the hog grower in pelleted form. Pelleted feeds are easier to handle than the dry feed—also when in pellets there is no separation into the components or dust and wind loss.

Prosperity cannot be divorced from humanity.

—Calvin Coolidge

Since this treatment adds to the cost, the question as to the economy is often raised. In pelleting high temperatures are produced which may affect the value. In performance pellet feeds are but little, if any, better than feeds in meal form.

Keep Hogs Healthy

One of the most important reasons why some farmers make more money than others with their hogs is because they keep their hogs healthier. Disease and parasite control have long been one of the big stumbling blocks in swine raising.

Research is uncovering new methods and materials for disease control. The antibiotics are helpful in this connection as well as growth promoting.

In some instances new discoveries are being made, like for example, Nitrofurazone which appears to be effective in the control of necro (necrotic enteritis) in swine.

New Killing Methods

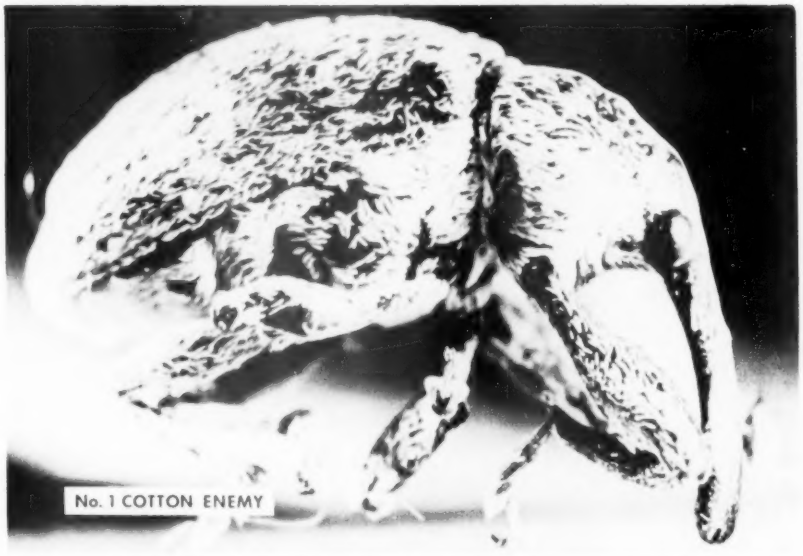
Hormel and Company's method of immobilizing the live pigs with carbon-dioxide prior to shackling for slaughter, represents a milestone in packing plant procedure.

Hog buyers, too, are now more critical in their evaluation of overly fat hogs. Further it has been demonstrated too that the meat type hog compares favorably in all production aspects with rangy or chuffy hogs.—*End.*

TOXAPHENE
(Chlorinated Camphene containing 67-69% chlorine)
News Digest
UP-TO-DATE INFORMATION ABOUT TOXAPHENE AS AN AGRICULTURAL INSECTICIDE

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY MARCH 1953

COTTON GROWERS PLANNING FOR BIG YIELDS AS SEASON'S INSECTICIDE ORDERING BEGINS



No. 1 COTTON ENEMY

Toxaphene Dusts and Sprays Used to Stop Chinch Bug Attacks

A severe chinch bug infestation on corn last summer in several counties in western Ohio was controlled successfully with toxaphene insecticides. Reports from 13 counties show that the insects were stopped by using toxaphene dust barriers or toxaphene sprays.

CHINCH BUG

Where dust was used, barriers from eight inches in width to 24 inches in width were laid down. Union County officials stated that a barrier eight inches to ten inches wide with liberal application was more effective than a wide barrier with a minimum application. The sprays were repeated on infested rows.

Damage to corn began about July 1, and continued for three weeks. In Wyandot County the outbreak was said to be the worst in three decades. Quick action by county agents throughout the area saved a large percentage of the planting, and prevented reinfestation.

Final Preparations Made to Control Cutworms, Thrips, Fleahoppers, Boll Weevils, and Other Crop Destroyers

Pre-season activity is evident throughout the Cotton Belt as growers are preparing for what may be one of their most productive years. Most growers are planning intensive farming to get higher yields . . . and profits . . . per acre. Farm chemicals such as fertilizers, herbicides, insecticides, seed protectants, and defoliants are being depended upon heavily to help in this program.

Prospects seem good that an adequate supply of insecticides will be available to meet the needs of the cotton grower. However, farm authorities urge that buying should start now to avoid possible shortages in areas where bad infestations might build up suddenly. Weather conditions during the early growing season will decide the number of insect pests that farmers will have to fight.

This is the ideal time of the year to lay in supplies of dusts or spray materials, and to clean, oil, and repair insecticide application equipment. With materials on hand and machinery ready to go when insect outbreaks are noticed, the farmer is prepared to do a swift and economical job of insect control.

Probably the first cotton insect pests that growers will encounter in the new season are cutworms, thrips, fleahoppers, and overwintering boll weevils.

Some insect control measures have already been taken in the Rio Grande Valley where automatic early-season control is advocated.

In all cases, local recommendations should be consulted and followed in the application of insecticides.

COTTON GROWERS WARNED NOT TO RELAX FIGHT AGAINST INSECTS

More than 800 persons attended the annual Cotton Insect Control Conference at Memphis early in the winter, to plan for increased control of the insect pests which lower production of cotton.

Speakers advised that a bad boll weevil or bollworm year could cut the cotton crop to such an extent as to produce a critical shortage of food, feed and fiber unless crops are protected with insecticides.

Although supplies of pesticides now seem adequate for the coming season, Lea S. Hitchner, executive secretary of the National Agricultural Chemicals Association, warned that regional shortages of materials can develop through the season. He said every means possible must be used to have the farmer, the distributor, and the dealer have an adequate portion of their requirements on hand when insect infestations appear.

W. A. Ruffin, Alabama extension entomologist, led a discussion on insecticide use in 1952. He said that although Alabama farmers bought large amounts of pesticides in 1951 and 1952, many did not have to use all these materials.

"Farmers in our area have relaxed," Ruffin said. "They hope there will be plenty of rain and no boll weevils in 1953. Most of them are going to continue in this relaxed condition until they have been hurt badly, unless we do an unusually good job of selling information, equipment, and poison in 1953."

Left to right: Dr. E. W. Dunham, Bureau of Entomology and Plant Quarantine, USDA, Stoneville, Miss.; Dr. G. C. Decker, entomologist, Illinois Natural History Survey and Agricultural Experiment Station, Urbana, Ill.; Dr. H. G. Johnston, National Cotton Council, Memphis, Tenn.

Left to right: L. C. Murphree, Coahoma Chemical Company; N. R. Downey, Hercules Powder Company; C. A. Wilson, entomologist, Mississippi State College; James Rea, entomologist, Mississippi State College.

Left to right: Dr. L. D. Newsom, entomologist, Louisiana Agricultural Experiment Station, Baton Rouge, La.; Gordon Barnes, extension entomologist, University of Arkansas, Fayetteville, Ark.; R. P. Mullet, extension entomologist, University of Tennessee, Knoxville, Tenn.; Dr. J. G. Watts, entomologist, Edisto Experiment Station, Blacksville, S. C.

The editors welcome contributions to this column

"Boll weevils are snatching the sheets," the National Cotton Council says. Estimates of cotton insect damage reveal that the annual loss in the United States is more than three times the amount of cotton used in the manufacture of pillowcases and sheets.

The Council estimates that the average yearly loss to insect pests in the 16 major cotton-producing states is about $392,000,000. Of all the many destructive cotton insects, the boll weevil causes the greatest losses.

* * *

Millions of people are saved from death or serious illness because of chemical insecticides and repellents, Dr. Edward F. Knipling, president of the American Association of Economic Entomologists, said at the annual meeting held in Philadelphia. Dr. Knipling stated that insecticides should be considered as man-savers because they control injurious insects.

"We must remember," Dr. Knipling stated, "that, because of the many diseases they transmit, insects are responsible for the death of millions of people each year and the illness of several hundred million more."

* * *

Results from experiments in Wyoming indicate that a 5% toxaphene dust has been very effective in controlling the sheep ked, or sheep tick, a common ectoparasite of sheep in the Rocky Mountain States. Dusting is easier, faster, cheaper, and safer than dipping. The report stated that the cost of materials for dusting ranges from ½¢ to 1¢ per head per treatment.

* * *

A recent editorial in *The Cotton Trade Journal* entitled "Profitable Cotton Farming" said, "There is no valid reason why it should not become a general practice for the cotton farmer, when applying to his local bank for financing, to include the anticipated cost of insecticides and herbicides, for example, as well as of seed, fertilizer and labor. This is a sound practice not alone for the farmer—but for the banker as well—since application of the most modern technology insures a profitable crop and therefore constitutes a protection of the banker's investment. The chemical companies and other suppliers of the cotton industry have placed at the disposal of the American cotton farmer their vast know-how and technological skill. By including the anticipated cost of these invaluable assets when applying for financing, the farmer can take a long step forward toward assuring himself of a profitable season."

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Color Book of Insect Pests Is Valuable Identification Aid

A new folder produced by Hercules Powder Company, "Seed, Cereal, and Forage Insect Pests," is now being distributed through state agencies as an educational aid. The folder pictures 13 important pests in full color, and gives a description of their habits and damage caused. In addition to the distribution now under way, quantities are available to readers who want this information to reach farmers in their localities.

The Texas Extension office used 10,000 in November and early December, and has requested an additional 50,000. The Washington Extension Service says, "The folder is very attractive and worthwhile and will meet a definite need of our alfalfa and clover producers. . . ." Early in November, 39 county agents had requested 5,615 copies of the folder.

A total of 7,800 copies has gone to county agents in South Carolina. A letter from the Extension Service says, "We think the material is well illustrated and insects well described. We believe that this is one phase of insect control which is going to be considerably more developed."

In requesting 2,500 copies, the North Dakota Extension Service writes, "You are to be complimented on a fine job." Oklahoma says, "This is an excellent folder, and it will be appreciated by many of our cereal-growing farmers." A quantity of 20,000 was requested. The Alabama Extension Service asked for 10,000 copies, and remarked that the folder would be very helpful.

Massachusetts said, "We have checked these folders over and find that both the text and the plates are of such high quality that they will be of great assistance to farmers in identifying many pests." Another Massachusetts letter said, "We consider the folder to be excellent. The illustrations are very well done and the description and other materials certainly are all that could be asked for."

Additional requests came from Maryland, Pennsylvania, Mississippi, Ohio, California, and other important forage-crop states.

To date, over 160,000 copies have been sent out from Wilmington, with additional requests being filled daily.

Toxaphene Helps Mississippi 5-Acre Cotton Contest Winners

For the second consecutive year toxaphene insecticides played an important part in helping the winner of the Mississippi 5-Acre Cotton Contest. The 1952 champion, Harris Swayze, Midway Community, Yazoo County, took the top award with the production of 8,890 pounds of lint on his five acres.

Harris Swayze

Swayze started poisoning when cotton first came up in May. He sprayed with toxaphene twice to control thrips, cutworms, and early boll weevils. In June he sprayed with toxaphene three times to control boll weevils and worms. In July and August he made four toxaphene applications by plane, and during August and September five applications of a DDT-sulfur combination were made by plane. The last poison was applied September 3.

Swayze said that his complete poisoning program cost him $21.90 per acre. Did it pay off? His gross income on the five-acre plot was $824.60 per acre! The new champion was helped by County Agent D. P. McGowan of Yazoo City. Boll weevils were first noticed on May 15. The highest infestation was 15%. The weevils migrated about the first of August.

Delta District Winner Used Toxaphene, Too

Another top cotton grower, Harris Barnes, Jr., Coahoma County, used toxaphene to help him win the Delta District championship with a production record of 7,041 pounds of lint on a five-acre plot. Barnes is manager of Connell & Company, Sherard.

Harris Barnes, Jr.

He began poisoning on May 22 to control thrips and cutworms, using two applications of 4-pound liquid toxaphene sprayed at the rate of one pound of toxaphene in one gallon of water per acre. From June 16 through July 7, Barnes made four applications of 4-pound liquid toxaphene but increased rate of spray to 2 or 3 gallons of solution per acre to control early worms. A four-row tractor sprayer was used for the first six applications.

Through July and August applications of other recommended materials, including a systemic, were used. A total of 17 insecticide applications was made altogether.

Barnes estimated that his poisoning program cost him $10.23 per acre. His gross income was $720.64 per acre. These high yields are nothing new to Barnes, who produced 1,527 pounds per acre in 1951 in the 5-Acre Cotton Contest. Like many other prize winners, he used toxaphene to protect this crop also. The county agent who assisted Barnes was Q. S. Vail of Clarksdale.

The $500 checks, which both Swayze and Barnes received, were even greater proof that cotton insect control pays off in more profits per acre.

TOP PRODUCERS IN MISSISSIPPI CONTEST

Here are the top cotton growers who won honors in the Mississippi 5-Acre Cotton Contest. All of the state's cotton-growing districts are represented.

Three New Films Ready for Insect Education Programs

Three new films are now available to help alfalfa farmers make better yields through effective insect control. The films, all 16 mm, in sound and full color, were produced by Hercules Powder Company as part of their educational program. Showings can be arranged without charge.

THE POLLINATION OF ALFALFA

This film will be especially valuable in areas where alfalfa and other forage crops are grown for seed. It depicts the essential function of bees in pollination, and shows how seed production can be increased greatly through cooperation between growers and beekeepers.

The running time for "The Pollination of Alfalfa" is 25 minutes. The amazing closeup shots of wild bees and honey bees visiting the blossoms make this an unusually fascinating movie.

THE ALFALFA WEEVIL AND ITS CONTROL

Filmed during the alfalfa infestation last spring, this movie shows how farmers are controlling this insect pest by modern methods developed through the cooperation of the U. S. Department of Agriculture with the state extension services and the state agricultural colleges.

The life cycle of the alfalfa weevil is shown so that farmers will be better prepared to fight the insect at the right time with recommended methods. Running time for the movie is 10 minutes.

Scene from "The Pollination of Alfalfa," new Hercules movie which stresses the importance of bees in alfalfa production.

THE SPITTLEBUG AND ITS CONTROL

Running 14 minutes, this film shows the life cycle of the spittlebug which has caused great losses to alfalfa crops, particularly in the middle-western and middle Atlantic states. Interviews with farmers who have successfully controlled this insect pest are featured with action shots showing their methods of insecticide application.

Parts of "The Spittlebug and Its Control" were filmed in alfalfa fields last spring when the insects first emerged. Later scenes were taken when the first cuttings of hay were harvested.

HOW FILMS MAY BE OBTAINED

These three films are all available for showing through county agents, state extension services, or Hercules representatives. Ask your local agricultural authorities when they will be shown in your community, or write to Hercules Powder Company.

MANY STATES ENTER ENTOMOLOGY PROGRAM

To date, 31 states have indicated that they will definitely participate in the 1953 National 4-H Entomology Awards Program. Other states are expected to send in their acceptances in the near future.

Information on this year's projects in the new and growing National 4-H Entomology Awards Program may be obtained from your county agent.

Cornell Entomologist Writes Of Millions Of Forage Insects

"There are as many as one to ten million insects at one time on an acre of forage crops such as alfalfa and clover." That statement by Dr. R. W. Leiby, Department of Entomology, Cornell University, is certainly enough to convince farmers that insect control is necessary.

In his article, "Insecticides Control Forage Pests" (January *Better Farming Methods*), Dr. Leiby pointed out that the hordes of insects which can be collected by sweeping fields with a bug net represent only part of the insect population. Underground, he says, you will meet up with grubs, snout beetles, wireworms, and root borers.

Our forage crops, and seed production for them, Dr. Leiby said, will be materially increased in quality and quantity through a program of insect control. He cited results of a series of demonstrations conducted in New York state where alfalfa and clover hay yields were increased from 25% to 55%.

"Not only was the yield increased greatly," Dr. Leiby wrote, "but the quality was improved. The vitamin A content was increased and there was more carotin in the hay."

"One of the major uses of our insecticides will be for forage insect control," Dr. Leiby concluded.

This is your Paper

The rapidly growing acceptance of toxaphene agricultural insecticides has created a demand for current information on their development and use.

Look to the NEWS DIGEST as your authority on toxaphene. We welcome your letters. Address all material to the Editors, TOXAPHENE NEWS DIGEST, Room 923, Delaware Trust Building, Wilmington 99, Del.

THE CHEMICAL BASE FOR TOXAPHENE INSECTICIDES IS PRODUCED BY HERCULES FROM THE SOUTHERN PINE

NAVAL STORES DEPARTMENT

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Wilmington 99, Delaware

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What's New In . . .

Crop Husbandry

By H. R. LATHROPE
Purdue University

● NEW VERSIONS of old ideas and practices are being brought to agriculture by the score. The old adage "there is nothing new under the sun" may be true, but new angles are cropping up all over the Midwest.

The demand for food and clothing will always keep the farmer busily engaged. Land frontiers are gone. More food must come from our present or even reduced acreages.

Average corn yields of 50 bushels and average wheat yields of less than 20 bushels can be stepped up to possibly double these yields without extra labor or excessive increases in costs.

Solutions Save Labor

A new era of fertilizer application is on the horizon. The farm use of nitrogen solutions may change the handling of fertilizer.

Nitrogen solutions have been in use only one year in the Midwest and already farmer ingenuity has devised ways to apply 150 pounds of actual nitrogen per acre to more than 100 acres per day with one man operating a sprayer.

Stable forms of nitrogen using urea can now be applied far in advance of planting time. Standard sprayers can spread the labor load over a longer period. Material can be purchased in advance and stored cheaply. Nitrogen solutions are being sold like gasoline and oil.

Costs Come Down

Competition is forcing prices down so that nitrogen can be applied on a field for less than 15 cents per pound. It's quite likely that lower prices and ease of application will make for more adequate applications and profits will increase as a result.

Corn plant factories will then be operating on full time. No longer will corn fields "fire" for lack of nitrogen.

Phosphorus and potash can be applied more economically in bulk. Potash should be mixed with the soil for best results.

Spread by Airplane

Nitrogen solutions have been applied as a top dressing for wheat, oats, barley, rye, and pastures by plane with excellent results.

Nitrogen solutions can be applied evenly with weed sprayers when covering corn stalks, in order to bring the carbon nitrogen ratio to about 10 to 1. Nozzles or spray tips can be chrome plated to prevent corrosion.

Continuous Corn Harmful

Continuous corn can do to the Corn Belt what cotton did to the soils of the South.

Continuous corn can possibly be tolerated on the deep mellow and rich prairie soil for a long period of time.

The pleasantest things in the world are pleasant thoughts, and the great art is to have as many of them as possible.

—Christian Nestill Bovee

But on the forest soils already depleted in organic matters, continuous corn may ruin the structure and tilth. Once the organic matter is burned out with continuous cropping and cultivation, it cannot be completely replaced.

Organic matter is humus and humus is the life blood of the soil. The farmer ought to take time out to lubricate his soil with a crop of deep tap rooted legumes, such as sweet clover or alfalfa, once every four or five years.

When continuous corn is grown on soils already low in organic matter, aeration is reduced, vertical drainage becomes poor and corn yields are no longer profitable to the degree which producers demand.

Research Is Needed

Long time and thorough research is needed to determine how far producers can go with the program of continuous corn, without causing permanent soil damage.

When legumes are not needed for hay, pasture, or soil building they can rarely be grown for their contribution to the nitrogen supply of the soil. The real value of legumes has possibly been overlooked.

Time was when legumes were grown with the idea that they put around 100 pounds of nitrogen in the soil per acre per year. This use of legumes is no longer profitable, because 100 pounds of actual nitrogen can be purchased and

For Bigger Yields

Try New, Slow-Soluble
TRACE ELEMENTS

F·T·E*

Make sure your crops are getting the vital trace elements they need for healthy growth and bigger yields. These vital plant minerals now can be introduced into your soil in a new, *slow-soluble* form called FTE (Fritted Trace Elements). FTE is nontoxic and stays in the plant root area throughout the entire growing season.

FTE contains iron, manganese, copper, zinc, boron and molybdenum . . . the trace elements your crops need. Where trace element deficiencies exist, normal fertilizers do not supply these minerals. FTE not only supplies these minerals but also keeps them available to the growing crops, all season.

APPLICATION

FTE is now available in 1-lb. cans or in 5 and 50-lb. bags through *E. I. du Pont de Nemours & Co., Inc., garden product distributors.* Normal application is 1 lb./400 sq. ft.

FTE is also available as an additive in commercial fertilizers. Look for "FTE" on bags or labels. For further information, write Ferro Corporation, Cleveland 5, Ohio. In Canada, write Ferro Enamels (Canada) Ltd., Oakville, Ontario.

FERRO

F·T·E
(Fritted Trace Elements)

*Patent applied for Trademark

MARCH FARM BULLETIN

MONEYSAVING TIPS
on carburetor adjustment

You've long known that it's wasteful to have a *too-rich* mixture (indicated by sluggish engine performance and black smoke from the exhaust). Did you also know that a *too-lean* mixture is wasteful?

A mixture that is too *lean* (indicated by loss of power and spitting back through the carburetor, especially when the engine is accelerated) may actually *increase* fuel consumption, because you need to open the throttle farther to get required power.

New tune-up idea: To keep the carburetor and fuel system in top shape, add *Gulf SDL* (Solvent, Dryer, Lubricant) to your gasoline.

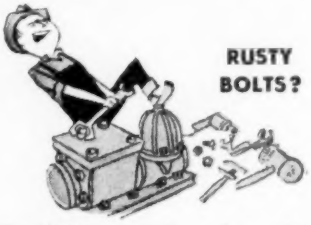
NEW! For America's neatest housewives!

Gulfmist, the new aerosol deodorizer really works wonders in taking care of unwanted household odors! See how *instantly* effective it is—in kitchen, bathroom, all around the house!

FREE! Be sure you get *your* copy of the 76-page Gulf *Farm Tractor Guide*. It's a tractor-owner's "bible." Just send a post-card request to Gulf Farm Aids, Room 1509, Gulf Bldg., Pittsburgh 30, Pa.

FOR SPRING PLOWING!

Order now—get the tires with the special *high-cleated tread:* Gulf Rear Tractor Tires. They take bigger and deeper bites—even bite through sod—to give you smooth, steady traction... full power at the drawbar. And Gulf's open-center design means better cleaning—they stay packed with traction, not with mud. Order now from your Gulf representative for early delivery.

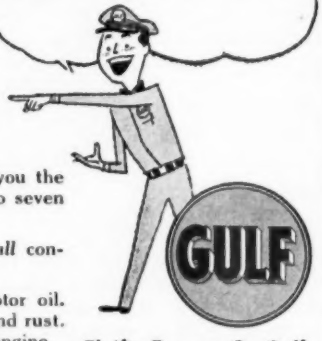


RUSTY BOLTS?

Try this! Just give 'em a few squirts of Gulf Penetrating Oil, the oil that penetrates and lubricates *fast!* Retards further rusting. Mighty handy, too, for freeing-up locks, killing squeaks in hinges and auto springs . . . scores of other uses.

Thrifty answer to *all* your lubrication problems:

GULF'S BIG 3!



1. Gulf All-Purpose Farm Grease—saves you the expense and bother of handling from five to seven different greases.

2. Gulf Multi-Purpose Gear Lubricant, for *all* conventional transmissions and differentials.

3. Gulfpride H. D., the *high detergency* motor oil. Protects against sludge deposits, corrosion and rust. Reduces oil consumption over the life of the engine.

Thrifty Farmers Go Gulf

applied for less than $15 per acre.

One cannot afford to grow a crop of legumes (standover) for $15 per acre. But many thousands of farmers are growing sweet clover as an intercrop for the cost of the seed alone which is less than $5 per acre.

Deep tap rooted legumes bore holes through plow pans and on down into the tightest subsoils. In addition, these legumes supply tons of food for micro-organisms and condition soils.

Tap rooted legumes are Nature's soil conditioners. Tap rooted legumes are the best and cheapest deep fertilizer placement machinery.

New Oat Variety

Missouri's 0-205 oat stands as well as Benton, a few days earlier, and is resistant to smuts and Victoria blight. It is moderately resistant to crown rust. The grain is dark so it will be used chiefly for feed on farms. Foundation seed will be available for spring planting.

For local recommendations on planting this variety, contact your state experiment station.

During the coming years efficient producers will want to secure for themselves all of the information available and then think through for themselves and decide which is best and most profitable.—*End.*

★

Albrecht Named Director

Dr. Herbert R. Albrecht, head of the Department of Agronomy at the Pennsylvania State College and widely known for his work in forage crop research, has been named director of the Agricultural and Home Economics Extension Service by President Milton S. Eisenhower, effective next July 1.

As state extension director, he will succeed J. Martin Fry who has held that post since 1942. Director Fry was eligible for retirement last June 30 but has continued to serve at the request of the college administration pending selection of a successor.

★

The Mill Iron Story

Here is an interesting booklet on the story of Mill Iron Ranches, producers of registered Hereford beef cattle.

Each year in October they hold an annual bull calf sale which gains nation wide attention. Agricultural leaders will be interested in the story of the development of this large Hereford enterprise. If you are interested in obtaining a copy of the booklet, write to Austin O'Neil, manager, Mill Iron Ranches, Wellington, Tex.

Masonite Booklet

A build-it-yourself brochure designed for the farmer or student is available on "How to Repair, Remodel, and Build on the Farm With Masonite Presdwood."

The 12-page booklet, illustrated throughout, gives ideas and information on the construction of many useful articles on and about the farm.

There are several handy home articles that can be made also.

A free copy may be obtained by sending a card to Masonite Corp., 111 West Washington St., Chicago 2, Ill.

★

A Day to Remember—February 26, 1903

On February 26, 1953, a historical marker was unveiled in a special ceremony in Terrell, Tex.

The U. S. Department of Agriculture held a commemorative program. Many dignitaries attended.

In addition to this nation-wide observance, many state colleges observed this anniversary in their own states with pageants, exhibits, publications, and other special programs.

What was it?

It was the 50th anniversary of the first farmer-conducted farm demonstration plan employed under the USDA.

It was the 50th anniversary of a new approach to informal adult education in farming.

On this date in 1903, Dr. Seaman A. Knapp, one of America's great agricultural statesmen and father of the cooperative farm and home demonstration work, succeeded in planning and beginning with Walter C. Porter, local farmer, a demonstration to prove to other farmers the value of adopting scientifically proven practices.

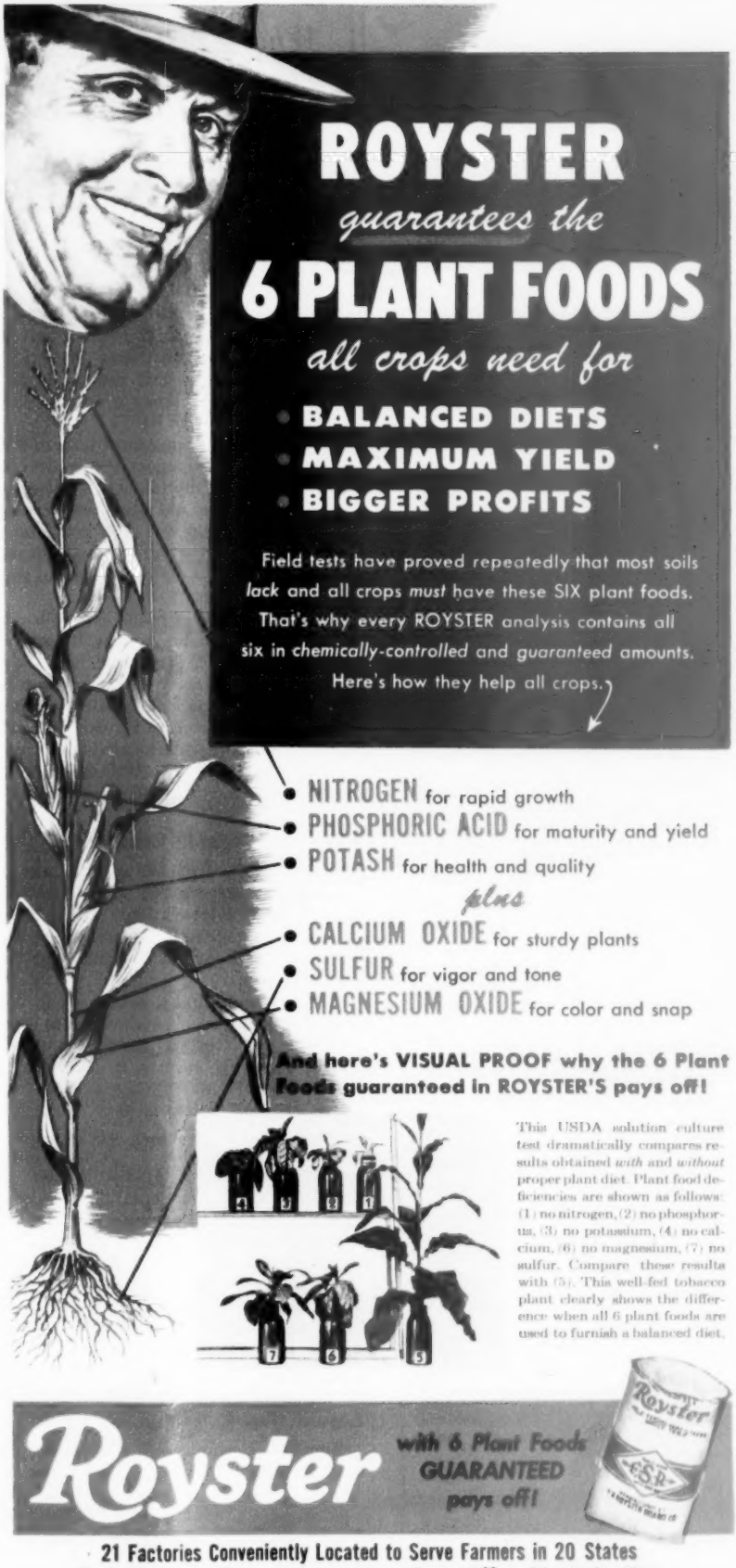
From this small and unnoticed demonstration in 1903, the nationwide and universally famous extension program developed. Dr. Knapp based his educational method on his belief that "what a man hears, he may doubt; what he sees, he may possibly doubt; but what he does, himself, he cannot doubt."

Following this demonstration Knapp organized the demonstration system of the USDA in Houston, Tex., in 1904.

It logically followed then that in later years the Smith-Lever Act of 1914 was passed, followed by the organization of the extension service in every state.

Not only county agents and those directly engaged in extension work, but also all agricultural leaders can have a feeling of pride at this 50th anniversary.

It marked a milestone in the development of agricultural education for the farmer in this country.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6 PLANT FOODS
all crops need for
• BALANCED DIETS
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• BIGGER PROFITS
Field tests have proved repeatedly that most soils lack and all crops must have these SIX plant foods. That's why every ROYSTER analysis contains all six in chemically-controlled and guaranteed amounts. Here's how they help all crops.
• NITROGEN for rapid growth
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plus
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• MAGNESIUM OXIDE for color and snap
And here's VISUAL PROOF why the 6 Plant Foods guaranteed in ROYSTER'S pays off!
This USDA solution culture test dramatically compares results obtained with and without proper plant diet. Plant food deficiencies are shown as follows: (1) no nitrogen, (2) no phosphorus, (3) no potassium, (4) no calcium, (6) no magnesium, (7) no sulfur. Compare these results with (5). This well-fed tobacco plant clearly shows the difference when all 6 plant foods are used to furnish a balanced diet.
Royster
with 6 Plant Foods GUARANTEED pays off!
21 Factories Conveniently Located to Serve Farmers in 20 States
F. S. Royster Guano Company, Home Office: Norfolk, Va.

Heptachlor Gives Lowest Cost Control of Alfalfa Weevils

HEPTACHLOR gives the lowest cost effective control of alfalfa weevils available to a farmer. Only 4 ounces of Heptachlor per acre applied in early Spring will give complete control. The increased value of hay and seed produced from Heptachlor-treated alfalfa fields will repay the cost of insecticide many times over.

Heptachlor has been extensively tested under field growing conditions, and is approved as an effective and safe insecticide for use in the control of alfalfa weevils. Heptachlor emulsifiable concentrate and dust formulations have been used with equal effectiveness.

Kill Adult Weevils

Heptachlor should be applied in the early Spring, as soon as possible after the alfalfa begins to grow. Weather warm enough to promote alfalfa growth will bring overwintered weevils out of the soil. Unless they are killed at once, adults will begin egg laying as soon as they come out of hibernation. One adult weevil can lay enough eggs in a season to produce as many as 800 larvae if all hatch. Larvae destroy alfalfa plants by feeding upon them. It is much easier to kill the relatively few adults in early Spring before they lay their eggs, than the tremendous number of larvae which can hatch out later in the season. Apply Heptachlor early, then, before alfalfa plants are 3 inches tall. Get the weevils before they lay their eggs.

Send For Free Folder

Apply Heptachlor with standard spraying and dusting equipment. Consult your local agricultural authority for correct timing and application rate.

You can get a FREE folder on alfalfa weevil control by mailing the coupon below. There's no obligation.

VELSICOL CORPORATION

Dept. A-7

330 East Grand Ave., Chicago 11, Ill.

Please send me____copies of Folder "How to Control Alfalfa Weevils with Heptachlor."

Name_____

Address_____

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What's New In . . .

Soil Husbandry

By **FIRMAN E. BEAR**
Rutgers University

● A GREAT DEAL of interest is developing in soil-test servicing.

In most states farmers can send in samples of soil to their county agricultural agent or experiment station for testing. Sometimes this testing is done free and at other times a small charge is made.

But many farmers would like to have someone bring the report of the test back to the farm and discuss it with them on the spot. They would also like a return visit or visits after the crop gets underway. To that end, what is known as soil-test servicing is being developed in some areas.

A fixed charge is made for collecting each sample and for testing it, and for each field visit. Experience has shown that many of the most troublesome problems that are met in the field are those of insects and diseases. So the field man soon becomes a general adviser on crop production problems. But farmers are prepared to pay for such services.

Maintain Organic Content

It is no simple matter to maintain the organic matter content of farmed soils at the desired levels. This applies particularly to vegetable farms, where land is kept under cultivation more or less continuously.

Such farmers find it necessary to take time off from crop production to grow summer catch crops and winter cover crops. They are finding it profitable to apply liberal amounts of fertilizer to these organic-matter crops.

By so doing they not only produce much larger amounts but a much more nutritious kind of organic matter. In other words, the fertilizer is used twice —once to grow the cover crop and a second time, after the cover crop has been worked into the soil, to grow a cash crop.

If this well-fertilized organic-matter crop is plowed under green, it rots rapidly and quickly releases most of the fertilizer in it to the crop that follows.

Liquid Soil Conditioners

Synthetic organic soil conditioners of considerable variety are now being offered for sale. The liquid forms are being used to best advantage on top of the soil to stop erosion on slopes and to prevent surface crusting over small seeds.

The powder forms are preferred for mixing with the soil so as to condition it to plow depth. For this purpose the surface of the soil should be dry and the soil beneath in good working condition.

The rotary hoe is the most efficient implement for mixing such powders with the soil. Following the next rain, the soil should be worked again so as to develop the soil aggregates to the desired depth.

The cost of these products is still too high to permit of field use, except possibly along the row. But large-scale use is being made of them in gardens and greenhouses. Their effects may last several years.

A Way to Kill Sod

An important recent development is that of using weedicides to kill old grass sods in preparation for reseeding to improved grass-legume mixtures. The dead sod can readily be disked up to provide a very useful mulch. This helps prevent erosion and increases water infiltration until such time as the new seeding gets underway.

This modern system of pasture renovation is much less expensive and much more effective than the older methods of moldboard plowing or of disking up live sod.

More and more attention is being paid to devising systems of row-crop farming. With this system only an 8 to 10 inch band of soil is broken up along the row, the remainder being left in sod or covered with crop refuse, depending on circumstances.

A number of highly successful authenticated cases of once-over types of farming are at hand. It remains to be seen as to just what these practices may eventually develop into.

But already enough is known about this matter to justify a great deal of attention on the part of farm-machinery producers to the development of suitable planters for such cropping systems.

Study Trace Elements

A great deal of study is being devoted to trace elements as agents for increasing crop yields. Borax is now being widely used, especially for legumes, root crops, celery, and apples. In many areas, there is need for iron, manganese, copper, zinc, or molybdenum.

The metallic elements are now avail-

able in quickly soluble sulfates and as slowly soluble agricultural frits.

The newest development in this field, notably for use in overcoming iron deficiency, is the chelated type of compound. In this form, the element remains much more soluble than the sulfate when applied to the soil, one gram of chelated iron being about as effective as 1 pound of iron sulfate.

New Uses for Nitrogen

Many new uses are being found for nitrogen fertilizers. They are being applied over straw or cornstalks in sufficient amounts to raise the nitrogen content from about 0.75 to 2.50.

This can be accomplished by applying 100 pounds ammonium nitrate for each ton of straw, disking the two into the soil, and then plowing them under. This speeds up rotting and prevents soil microorganisms from competing with the newly planted crop for nitrogen.

Urea is now being widely used in spray form to supply extra nitrogen to fruit trees and vegetables.

Anhydrous ammonia is being used at rates up to 100 pounds nitrogen an acre of corn, being placed half way between the rows and 4 to 6 inches deep.

Nitrogen fertilizers are even being used on legumes, notably for snapbeans, canning peas, and soybeans.—*End.*

★

Montana Agents Elect Officers

W. W. Mauritson, county agent, Flathead county, was elected president of the Montana Association of County Agents at their annual meeting.

The other officers are Kim Roberts, Sanders county, first vice president; J. Glenn Jones, Deerlodge, Powell county, second vice president; and R. F. Bucher, Toole county, secretary-treasurer.

The annual county agents' meeting was held in conjunction with the annual conference at Bozeman, January 7-10.

W. W. Mauritson succeeds B. J. Janssen, Plentywood, as president.—*T. H. Alexander, county agent, Billings, Mont.*

★

Rat Control Booklets

Five booklets are available to agricultural leaders on the control of rats by the D-Con Company, Inc., 112 E. Walton St., Chicago 11, Ill.

These are titled "R-Day America," "Rats, Grain, and Warficide," "The d-CON Story," "Rodent Control Guide Book," and "A Study on Rat Baits."

Should you be interested in obtaining these booklets, all of which will be of help to you in aiding farmers in controlling rats, write to the company address as given above.

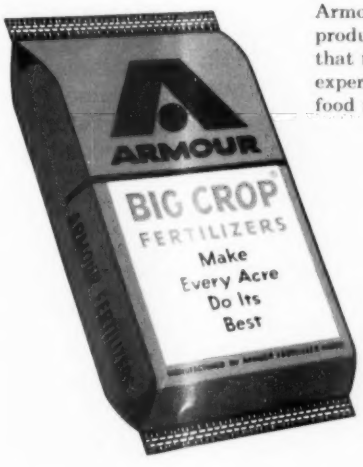
How much is experience worth?

There is no substitute for knowledge gained through experience in farming. And there's no substitute for experience in formulating and blending the kinds of fertilizers that help crops grow, increase yield, quality and profits.

For more than fifty years Armour fertilizers have been "making every acre do its best." Farmers know that Armour's highest-quality fertilizers are made right and cured right to give best results with all crops.

Every bag of fertilizer sold by Armour is backed by over fifty years of painstaking scientific research in the fields of chemistry and farming. Testimonials from every section of the country—on all types of crops—prove that Armour fertilizers make increased yields of better quality crops that bring higher profits.

You can depend on Armour Fertilizers—product of more that fifty years' experience in plant food manufacture!



ARMOUR FERTILIZER WORKS
GENERAL OFFICES ATLANTA, GA.

What's the Best Way to Preserve Silage?

By G. Bohstedt
University of Wisconsin

● ONE WAY OF ANSWERING the question as to the best way of preserving silage, is to say, "Let it stew in its own juice."

This definitely applies to a silage crop that, because of its high sugar content, could be designated as "a natural," such as green corn, cane, or sorghum.

Most grasses, especially legumes, differ from the composition of corn and related crops. Legumes in general have a low sugar content but a high protein and calcium or alkaline content.

While excellent in themselves, these components are not so good for the production of silage. The reason is that what little acidity is produced combines in part with the calcium and protein, and leaves such little acid as to cause a considerable breakup of protein. This gives us the strong odors due largely to sulfur compounds which are formed from the breakup of protein.

Livestock Eat It

The cow, steer, or even sheep do not object very much to smelly silage with its butyric instead of lactic acid, but the owner or farm manager does, or rather his wife. She doesn't like that strong silage odor that clings to the clothes of her man.

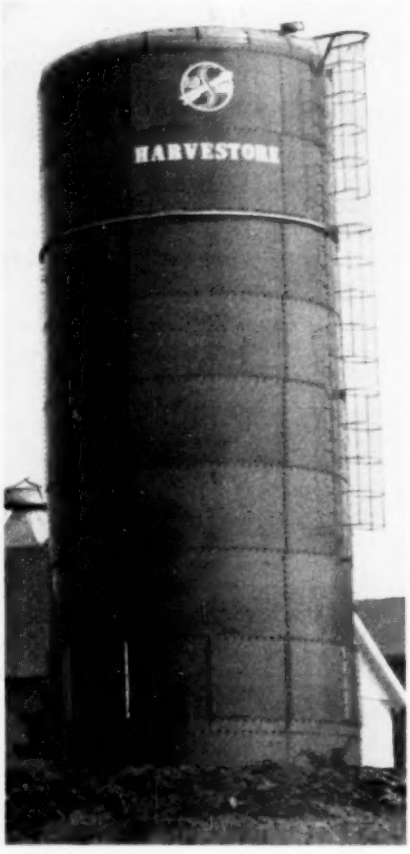
Unless the cow stable is well ventilated, the odor is also likely to impart a feedy flavor to the milk.

So, then, grass silage, which in most cases means the combination of legume and grass silage, needs, for best results, some added "preservative" or "improver." During the course of years many such silage preservers have been tried out, some of them with such good results as to bring about their adoption.

Acid Preservative Used

Some 20 years ago, growing out of European experience, a mixture of sulfuric and hydrochloric acid, the so-called A. I. V. acid, was advocated. This brought about good preservation of protein, carotene, and other nutrients of legume silage. While undoubtedly efficient, this A. I. V. acid treatment never became popular in this country. Its application was too bothersome and forbidding, even though before its use the acid was diluted in several times its volume of water.

Somewhat milder phosphoric acid and sulfuric acid (SO_2gas combining with the water in the forage) have had wider popularity in this country. But they still fall short of the desired combination of efficiency, economy, and convenience.



This is one of the newer type silos, the glass-lined Harvestore. It is made by the A. O. Smith Corporation.

Meanwhile molasses of all kinds—cane, corn, beet, wood, and citrus pulp molasses—designed to make for good fermentation, has come into considerable popularity.

Dried or condensed whey, in reference to sugar, has a composition similar to that of molasses.

Use Ground Grain

Ground grain, especially ground ear corn or ground shelled corn, to soak up surplus moisture and to make for better quality and palatability of the silage, has been used fairly extensively.

In the latter case a lot depends on whether the stockman or dairyman lives in a grain-surplus or grain-deficit area. The use of ground grain in the amounts required does not usually appeal from the economy standpoint.

Molasses feeds have been used, being dry mixtures of liquid molasses absorbed on perhaps oil meal, alfalfa meal, and ground limestone. They usually contain less sugar per pound than does liquid molasses.

One of their best assets as grass silage preservers is their convenience. Like ground corn or similar grain, simply dump such dry feed on top of a load of chopped green forage, and let the materials be mixed and distributed going through the blower into the silo. No molasses pump or other gadget for adding moist preservers is necessary.

Bacteria Cultures Tested

Then there are bacterial cultures, to provide suitable bacteria for fermentation, being put on the market under various trade names, with directions for their use.

Careful tests at different experiment stations have shown little or no improvement through their use. There are acid-forming bacteria present in great abundance on the green forage—bacteria that will grow and form acid in the silage if they have the proper conditions.

About all that can be said for the use of salt, usually applied in amounts of about 5 pounds per ton of green forage, is that it makes the silage a trifle more palatable.

The following are the amounts of some of the preservatives or "improvers" that have given good results in various tests.

	Pounds to use for each ton of		
	Legumes	Legume and Grass mixed	Grasses and Cereals
Molasses (approx. 50% sugar)	60	40	30
Ground shelled corn or small grain	150	125	100
Corn-and-cob meal	200	150	125
Dried whey	40	30	30
Phosphoric Acid (75% concentration)	20	15	10

Somewhat larger amounts of preservatives than indicated above might be used if they are relatively cheap. But the trouble in many cases is that these preservers are not cheap, and at times are in short supply.

Can Omit Preservative

Then what has happened, at times, is that a lot of grass silage is prepared "as is," without any preservative. It is prepared even without wilting, which has come to be looked upon as a substitute for a preservative. In many cases the

Grass can keep us all "in clover"

Next to pasture, a mow full of good hay rates first with most farmers.

Few feeds are as full of nutritive qualities as hay. Few feeds are so widely used in rations for dairy or beef cattle, hogs, sheep, poultry. And hay is one of the most inexpensive sources of minerals and vitamins—if its quality is high.

That's why grassland farming has done and can do so much to help farmers faced with growing labor and feed costs. Compared with other crops, grass requires much less time and effort to bring a valuable return. For farmers who take full advantage of the latest systems and machines, the returns are even more profitable.

New Holland balers, for example, are designed to give highest possible capacity. The "77" twine-tie and Model "80" wire-tie both can bale up to 10 tons an hour. This speed makes it possible to harvest greater stands just at the right stage of curing . . . before hay can be weather spoiled by a sudden rain storm or by too many hours in the hot sun. It puts better feed in the barn in less time and with less trouble.

Performance of these balers on farms all over the country has won New Holland the title of "First in Grassland Farming." Today, farmers go to New Holland for the balers, forage harvesters, mowers, forage blowers and spreader-seeders they know will give them greatest returns from their grassland programs.

The New Holland Machine Company, a subsidiary of The Sperry Corporation.

NEW HOLLAND

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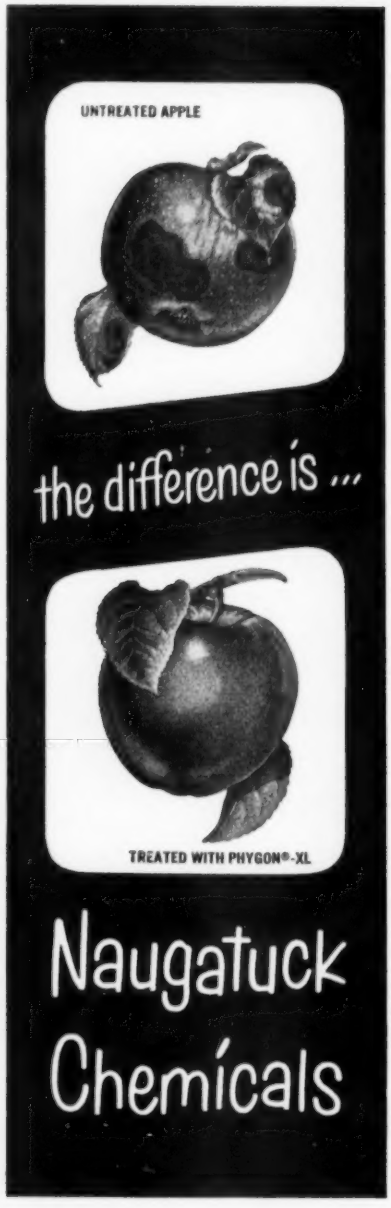

UNITED STATES RUBBER COMPANY

Naugatuck Chemical Division, Naugatuck, Conn.

manufacturers of seed protectants — Spergon, Spergon-DDT, Spergon-SL, Spergon-DDT-SL, Phygon Seed Protectant, Phygon Naugets, Phygon-XL-DDT, Thiram Naugets — fungicides — Spergon Wettable, Phygon-XL — insecticides — Synklor-48-E, Synklor-50-W — fungicide-insecticides — Spergon Gladiolus Dust, Phygon Rose Dust — miticides — Aramite.

green hay crop was simply stacked outdoors, as is a great deal of peavine silage, the by-product of the many pea vineries in some of our states.

Was It Satisfactory?

How did such silage turn out?

Not too bad. In some cases, not bad at all. Certainly it saved a lot of feed value that during the unfavorable haying weather would have gone to waste.

In many cases a relatively large farm operation or large output per man makes necessary the "cutting of corners." This tends to shock some of our European farmer visitors who aim to make every forkfull of feed as efficient as possible.

Those of us who manage to have one of the glass-lined gas-tight, self-unloading metal silos, have of course a good means for eliminating spoilage caused by the presence of air.

Fresh green forage, including early season peak pasturage, can be admitted into the silo again and again for refills during the growing season, thus making for efficient conservation of forage.

What Is Best Silo?

What type of silo may best fit a situation?

For one thing the writer would hesitate to put wilted grass silage into a trench, for the reason that height and consequent pressure are definitely factors in preservation. Otherwise, too much air is held in such a shallow layer of silage, with resultant excessive heating.

On the other hand, a tall silo may make the wilting of an early season crop that much more necessary. Otherwise a severe strain may be put upon the silo and a lot of liquid lost at the base.

What's the best way to preserve silage?

There will never be one best way for a whole country or a whole state. As various grass silage preservatives have in disinterested fashion been demonstrated to be economical, they still have the call.

Some of these perservatives may be included in the above table, others not. Time and geography, as in many other cases, determine the choice.—*End.*

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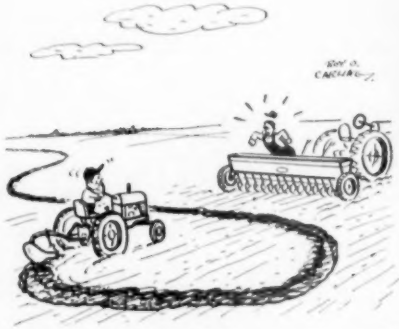


"Junior, will you stop following me around!"

Montana County Agent association officers are, left to right, W. W. Mauritson, Flathead county, president; Kim O. Roberts, Sanders county, first vice president; J. Glenn Jones, Powell county, second vice president; and R. F. Bucher, Toole county, sec.-treas.

★

Special Banquet Tables

This is the famous Monroe folding pedestal banquet table featuring rigid chassis, non-tip design, flat stacking and storage ease, no knee interference, and an exclusive locking design.

Special tops of bonded formica, ornacel, or plasticel are available. You do not need a covering cloth with these tables. They will not stain.

A special catalog describing in detail these tables is available from the Monroe Co., 174 Church St., Colfax, Ia.

★

Louisiana Governor Robert F. Kennon congratulates Jimmy Dillon, Moorehouse Parish (county) on his becoming the state's first national Future Farmers of America president. Looking on is State Superintendent of Public Education Shelby M. Jackson, founder of the first Louisiana FFA chapter in 1929 while a vocational agriculture teacher. Dillon was made a colonel on the Louisiana governor's staff.

4-H Camping Association Holds Annual Convention

A big event in New England is the annual convention of the New England Camping Association at Boston. Each year the camping committee of the New England County Club Association holds a session on 4-H camping.

Wayne Rich, Concord, N.H., chairman of this year's committee, prepared an interesting program on the subject of "Making the Best Better in 4-H Camping."

Elmer Clark, Sargent Camps, Peterborough, N.H., gave an inspiring talk, which was followed by a panel discussion with participants representing club agent, local leaders, older club members, and parents. Many club agents also took in the fine program of the New England Camping Association convention. The program was varied, with speakers on social development, camping philosophy, and workshops on a wide variety of subjects.

These are the newly elected officers of the New England County Club Agents association. Left to right, Bruce R. Buchanan, Vermont, editor; Mrs. Leona Shibles, Maine, vice president; S. David Wright, Vermont, president; Carolyn Crowell, New Hampshire, secretary; Theo. Suddard, Rhode Island, treas.

The officers and directors of the New England County Club Agents' Association held the regular mid-winter planning meeting at Boston, preceding the camping program.

Plans for the year's activities were made, including the program at Camp Vail at the Eastern States Exposition, and the annual meeting October 2-4, which will be held in Vermont.

★

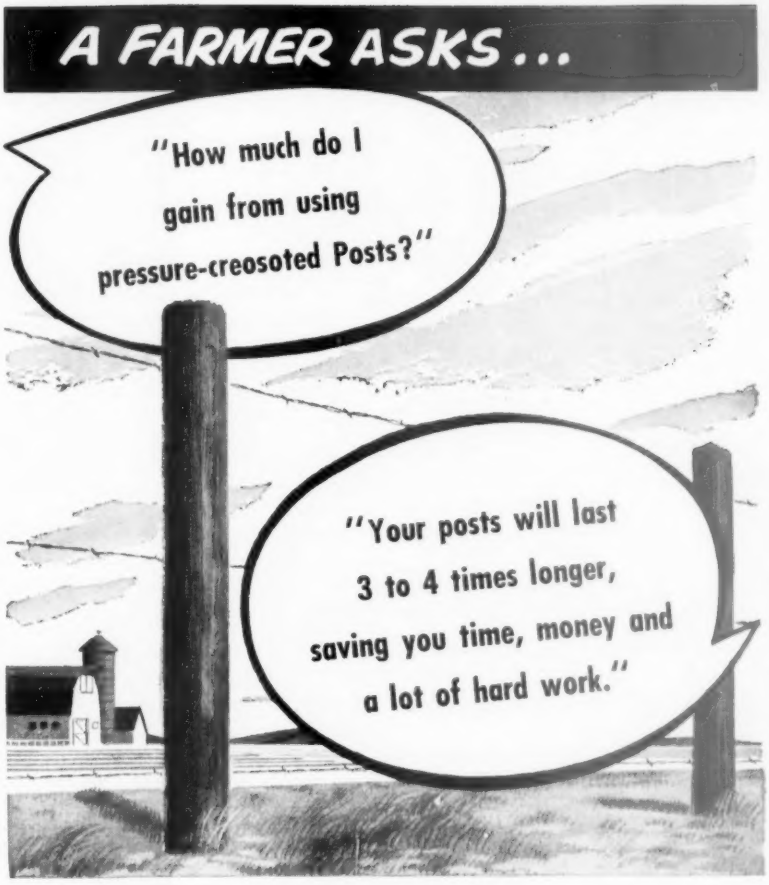
Fire Protection

The Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., has produced a booklet on how to build a concrete farm cistern.

This provides a reservoir of water that can be used in an emergency to fight farm fires.

The booklet gives complete details for building this cistern along with working drawings.

Ag leaders may request a copy from the address given above.


A FARMER ASKS...
"How much do I gain from using pressure-creosoted Posts?"
"Your posts will last 3 to 4 times longer, saving you time, money and a lot of hard work."

FARMERS report that wood posts stay sound and usable for 30 and even 40 years when they are pressure-treated with creosote. Pressure-creosoting *completely* protects the wood from insects and fungi that cause decay. It makes the wood more resistant to burning . . . reduces the likelihood of a grass fire destroying a fence.

You're doing right by the farmers in your district if you always recommend pressure-creosoted fence posts. Remember . . . creosote is the *only* preservative that keeps wood sound and serviceable under severe conditions for more than 30 years!

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Science in the Barnyard

By DR. HESS

Horns on cattle have been just so much excess baggage for thousands of years. Since they're costly and dangerous ornaments at best, it's good practice to stop horn growth at early calfhood . . . to literally "nip them in the bud." Otherwise, horn buttons soon become anchored to the calf's skull bone. After that, dehorning is a gory operation that's plenty painful to the animal.

We've tested various chemicals on many calves in searching for a more humane and effective calfhood dehorner. Our research staff's requirements were threefold. First, they wanted to find an escharotic that would definitely stop horn growth. Also, it would have to be less painful than old-style caustic sticks and pastes. Quick drying was also a prime consideration—something that would not run down and injure the calf's face or eyes.

The combination of ingredients that filled the bill was antimony trichloride and flexible collodion. Applied to the horn buttons with a small brush, this liquid preparation dries quickly to form a tough and pliable film. There is no oozing from the treated area, so it is unnecessary to place the usual vaseline ring around the horn button . . . as when alkali dehorning products are used. The film of collodion makes way for a dry scab which scales off within several weeks. Along with it go the deadened horn buttons.

Antimony trichloride proved much less painful to the calves than irritating alkalis commonly used. Calves dehorned with the new escharotic solution developed nicely shaped polls, too. In fact, farmers who saw these calves thought they were muleys. That suggested a fitting name for the new Dr. Hess dehorner — we called it POL (pronounced like "poll").

Want a copy of our folder, "Dehorn Calves," describing POL and how to use it? If so, simply send a postcard to Service Bureau, Dr. Hess & Clark, Inc., Ashland, Ohio. No obligation, of course.

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DR. HESS & CLARK, INC.
ASHLAND, OHIO

Scientific *Farm-aceuticals* Since 1893

What's New In . . . Dairy Husbandry

By E. J. PERRY
Rutgers University

● IT HAS BEEN FOUND that certain management practices can often help to prevent bloat. Some gas is always produced in the rumen by the normal process of digestion, and most of this escapes when the animal belches.

Discharge of gas is hastened when there is plenty of coarse roughage in the rumen. When a cow is allowed to feed heavily on clover the small amount of fiber causes solid packing and this tends to prevent belching.

Legume pastures wet with dew, rain, or frost are not always the ones that bring about the bloat condition, based on reports by the Ohio Agricultural Experiment Station. Cattle, have bloated on both dry and wet pastures.

Damp Forage Palatable

However, it is believed that damp forage is more palatable and so cows eat and swallow it a little faster. The herd should be given a feeding of hay first. Once it is accustomed to the legumes the conditioning should be continued by keeping them on it. Withholding during the night and part of the day, as is sometimes done, can turn out badly.

Animals will remember that they will get the legume pasture later and may not eat other forages. As a result, they will be more hungry than ever when they are turned on the legumes.

Beet Pulp in Silage

The Oregon Experiment Station has used dried molasses beet pulp in putting up grass and legume silage partly for the reasons that this product helped lower the loss of silo juice. It also acted as a good preservative.

The pulp was used at the rate of 60 pounds to the ton of green material, instead of 60 pounds of plain molasses. This switch to dry preservative cuts down the loss of juice by 700 pounds in a stave silo holding 70 tons of silage.

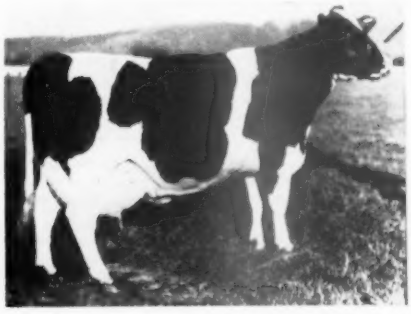
The protein and dry matter that was saved paid for the extra cost of the dried molasses beet pulp. One pound of pulp soaks up about 2 pounds of juice. The Oregon trial is being continued to learn the effect of heavier use of pulp.

Hay Crusher Improves Forage

In humid areas the so-called hay crusher is proving itself a useful tool in hay making. Actually it does not crush hay; it merely cracks the stems, allowing air to come into contact with more plant surface area, which speeds up the curing process considerably.

The New Jersey Experiment Station has noted that crushed hay takes about 25 percent less time to dry than hay cut with the conventional mower bar. In several trials crushed hay was dry enough to bale the same day it was cut.

The speeded up drying process also seems to make the hay more palatable to the cows. This is especially true of thick-stemmed first cutting legumes.



This Holstein cow, Carnation Homestead Daisy Madcap, recently completed in a year the production of 36,414.1 pounds of milk and 1,511.8 pounds of butterfat. Records were made under the strict American type of supervision. During the record year the cow ate two and one-half to three times as much as the average cow but produced seven times as much milk and butterfat. Her record compares to the average production of 220 pounds of butterfat in a year per cow. This Holstein weighs 1,900 pounds. Photo courtesy Carnation Milk Farm News.

In this haying test the best hay was made when it was left in the swath about two hours after cutting and then raked into a single windrow. Hay that was dried completely in the swath bleached out and became less tasty to the cows. Drying was faster in the single windrow and the hay kept its green color and leafiness.

Milk As Semen Diluter

Several experiment stations have been testing boiled milk, both whole and reconstituted skimmed, as a semen diluter and both have been found satisfactory. In the course of a year, artificial breeding organizations that adopt one of these in place of the egg yolk-sodium citrate diluter will save a good many dollars and there should be no decrease in conception rate.

British scientists have recently re-

ported a remarkable discovery. They found that the addition of glycerol to certain semen diluters had resulted in preserving sperm of several species for a period of weeks or months without impairing the fertilizing capacity of the semen.

Several experiment stations in the country have begun work on this rather complex project. If practical provision for storage can be evolved, a "semen bank" will obviously be a great boom to artificial breeding organizations.

Not only can all of the sperm of the great proved bulls be fully utilized, but much of that of the young ones in the process of being proved can be saved for full usage in the event that they truly demonstrate their worthiness as herd improvers.

Study Twins and Triplets

Identical twins and identical triplets have exactly the same inheritance. For this reason more and more of them are being used in experimental work.

Workers in New Zealand estimate that one set of identical twins is as reliable as 54 pairs of unrelated cows in experiments where the results are measured by butterfat production.

At the Minnesota station each one of twin heifers produced less than 10 pounds of fat in a year, milking about 58 days, whereas each of another set gave over 400 pounds of fat.

Life is like a blanket, too short. You pull it up and your toes rebel, you yank it down and shivers meander about your shoulders; but cheerful folks manage to draw their knees up and pass a very comfortable night.

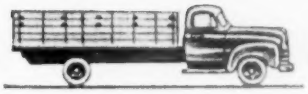
—Marion Howard

Develop New Milk Test

A new method for testing milk for fat percentage was recently announced by the USDA. It makes use of a detergent compound in place of sulphuric acid and measures the fat amount directly and rapidly.

Two reagents are necessary. They are a water solution containing a phosphate salt and a small amount of detergent (nonionic), and 50 percent methyl alcohol. The milk samples are handled in much the same way as for the Babcock test and no longer time is required.

It is claimed that a clearer fat column is produced, a little more precise reading of the percent is made possible and the bottles are easier to clean than when sulphuric acid is the reagent. Work for the further improvement of this method is being continued in the Bureau of Dairy Industry.—*End.*

THIS TRUCK  MARKETS

THIS TRUCK MARKETS

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How Would You Place These HEREFORD FAT STEERS?

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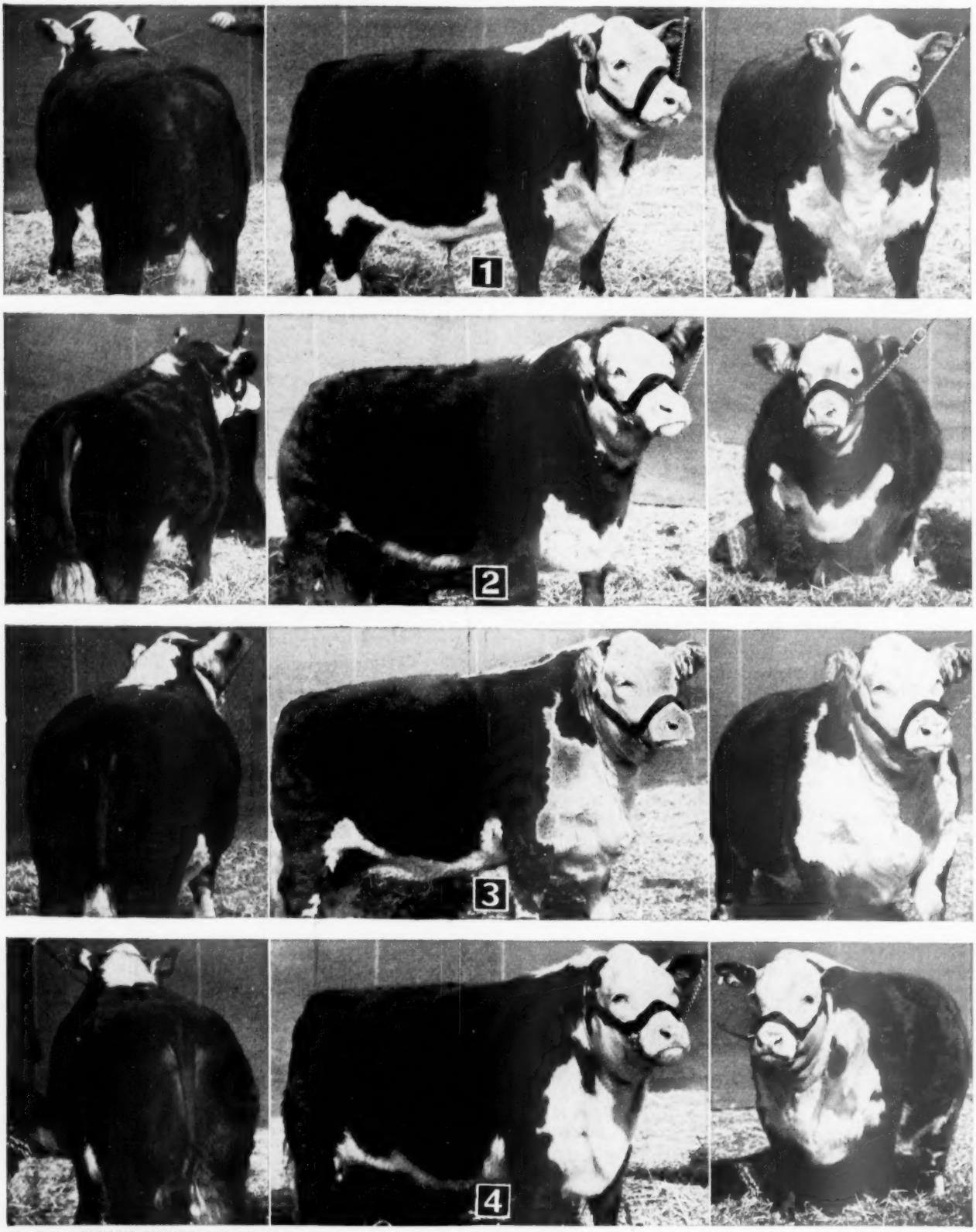

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What's New In . . .

Beef Husbandry

By L. S. POPE
Oklahoma A & M College

● IN THIS ERA of high feed prices and narrow margins, it is essential that the beef cattle producer do the best job possible in feeding, breeding, and management.

New developments in beef production must be used wherever possible to increase the total returns from the herd. Briefly, here are a few of the recent developments in beef cattle husbandry that bear watching.

Much has been said about the new supplements which have been designed to balance the protein, mineral, and vitamin deficiencies common to many of our farm roughages. Research at Purdue, Iowa, and Ohio indicates that with properly balanced supplements we can make better use of certain "waste feeds" on the farm.

Bacteria Need Nutrients

This long-neglected field of research is based on the theory that the bacteria which live and grow in the rumen, or paunch, of the cow must obtain certain nutrients from the ration in order to act on roughages and poor-quality feeds. When these nutrients are lacking, the bacteria fall down on the job and much of the potential value of the feed is lost.

With properly balanced supplements, corn cobs, straw, and fodder can be turned into satisfactory roughages for wintering beef cattle.

For example, in Purdue tests, ground corn cobs supplemented with protein, minerals, and vitamins A and D proved superior to clover-timothy hay for wintering steers. It seems probable that in the near future we will have improved supplements to go with each kind of roughage fed.

Use Cheap Roughage

Recent work at Missouri has demonstrated an interesting way to produce choice two-year-old steers on limited quantities of grain and a maximum of cheap grass and roughage.

Yearling steers, weighing about 600 pounds, were purchased in the fall and wintered on corn silage and legume hay to gain about 1.5 pounds per day. After a summer on wheat-lespedeza or alta fescue-ladino pastures, they were put in dry lot and finished out.

Some of the steers needed only 10.7 bushels of corn to reach a choice slaughter grade. Others "roughed" through the winter and grazing unimproved pastures during the summer needed 37 bushels of corn per steer to reach the same grade.

Creep Feed Calves

Lately, there has been increased interest in creep-feeding calves, particularly with calves too "plain" for the stocker-feeder trade. By creep-feeding, it is often possible to market a "two-way" calf—fat enough to go directly to the packer, or good enough to put in the feedlot for additional weight and finish.

It has been shown that creep-fed calves shrink less at weaning and go on full-feed quicker than calves which have had no previous taste of grain.

In a recent Kansas survey, creep-feeding was the most profitable method of producing beef on the farms and ranches of that state.

Vitamin A Experiments

In a recent Oklahoma experiment, beef cows were fed rations low in carotene for as long as 28 months without showing outward symptoms of a vitamin A deficiency. During this time, they completed a gestation and lactation period and were bred back.

However, a vitamin A deficiency was soon evident in their calves. Within a few weeks after birth, profuse watering of the eyes, diarrhea, weakness and poor growth were observed. Some of the calves died of pneumonia—probably a secondary complication of the vitamin deficiency.

Such symptoms can be prevented by feeding the cow 4 to 6 pounds daily of good legume hay, or by giving the calf 3 to 4 tablespoons of cod liver oil as soon as the symptoms begin to appear.

Improve Beef Cattle

Progress is being made toward improved lines of beef cattle within each of our major breeds. The USDA is conducting a large breeding project in cooperation with numerous college experiment stations.

The yardsticks used in selecting more efficient beef producers are productivity, feedlot performance, and carcass quality. Foundation stock for future generations is then selected from the "lines" which show the most promise.

Apparently a wide variation exists between individuals of the same breed.

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ON THE MARKET Market reports show that Herefords bring top market prices over 81% of the time. Hereford breeders, feeders, and other men of sound vision capitalize on the value of their land by marketing grass and grain through Herefords—*The Nation's Top Producers* of pounds and profit.

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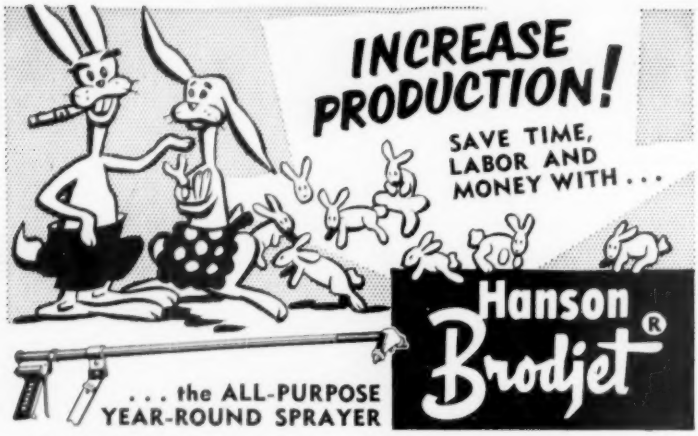

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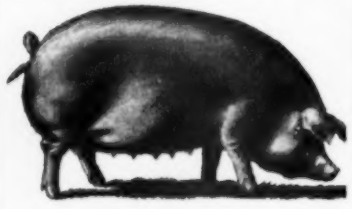

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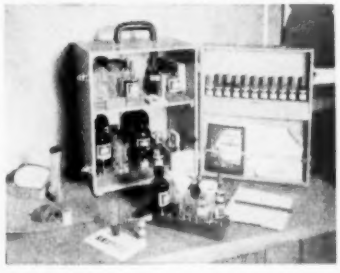

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LaMotte Chemical Products Co.

Dept. BFM **Towson, Baltimore 4, Md.**

Take the case of two bull calves out of a group of 11, all fed the same standard growing ration for 150 days. The fastest gaining bull put on 3.1 pounds per day, the slowest gained only 1.9. There was a difference between the two of 150 pounds of feed required to put on each 100 pounds of gain.

Control Horn Flies

The use of "rubbing posts" to control horn flies is increasing in popularity in the Southwest.

A post is set, leaving 6 feet or so above ground. Several strands of barbed wire are attached to the top of the post and anchored to a rock or post buried 8 to 10 feet away.

Burlap sacks are soaked in oil containing DDT, wrapped around the barbed wire and fastened securely; the barbs helping to hold the sacks in place. The sacks are recharged as needed.

While not as complete a method of controlling horn flies as spraying, these posts are labor-savers and greatly reduce the cost of treatment.

Recognize Testing

One major beef breed association has already recognized the importance of performance testing of future sires. Consignors may enter young bulls in a standard test, to be grown out under practical conditions. Records are kept on the bulls and at the end of the trial they are placed on sale, along with their record of performance.

It seems that if we place more emphasis on these really important traits in beef cattle production, we can develop better beef cattle for tomorrow's improved rations.—*End.*

★

Potential agricultural leaders competed for a nationwide "Achievement Award," sponsored by the American Society of Agronomy in cooperation with the American Plant Food Council. The top honors, as the best Agronomy Club in the United States, was won by the Texas A & M Club. Club President Glenn Black, center, is shown with John R. Taylor, Jr., left, agronomist representing the Council, and Darrel S. Metcalfe, Iowa State college, chairman, student activities, American Society of Agronomy. The award was made at the Society's annual convention in Cincinnati.

A youthful Illinois farmer, Harold F. Keith, left, recently received two registered Guernsey heifers from Ideal Guernsey Farms, Augusta, N. J. These were awarded him on the Todd Russell CBS-TV show, "Wheel of Fortune." Others in the picture are Russell and Miss Rae Culliton, who presented them.

★

Hereford Steer Placing

CORRECT PLACING 4-1-2-3

Both 4 and 1 are outstanding steers. They are excellent in type, wide topped, well finished Hereford steers showing unusual thickness, quality, style and smoothness. They are a close pair. Number 4 is placed first and over Number 1 because he is a deeper bodied, fuller and deeper flanked steer carrying more depth of quarter, more even fleshing and a sufficient amount of smooth finish. He is a more nearly balanced steer. I grant number 1 is a fatter steer which will yield higher, is a bit neater about the brisket, is fuller and wider through the rump and wider in the quarter.

Number 1 is placed second over number 2 because he is a thicker and fatter steer which will have a higher dressing percentage and yield a greater proportion of the higher priced cuts of beef. Number 1 is wider topped, fuller in the loin, wider and deeper in the quarters and deeper in the rear flank. I recognize that 1 is a larger steer than 2 and grant that 2 is equally desirable in compactness and beef type. Number 2 is also lower set and is a bit smoother fleshed.

Number 2 is placed third and over number 3 because he is a straighter lined, blockier, more desirable type steer that is especially shorter bodied and much lower set. He, too, is a well finished steer and shows more balance than 3. I grant number 3 is a fatter steer showing more depth of quarter and is a smooth, beefy steer of high quality and potential yield of beef.

I place 3 last because he lacks the excellence of type, balance and uniformity of lines of the other steers in this class. He is also the longest of body and legs.

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What's New In . . .

Poultry Husbandry

By MORLEY A. JULL
University of Maryland

● REMARKABLE PROGRESS has been made recently in ascertaining the nutritional requirements of growing chickens and laying hens.

This has led to the adoption of improved techniques in breeding for rapid growth and high egg production. It has resulted in greatly increased efficiency of egg and chicken meat production.

Research on Nutrition

The energy level of the diet influences the total amount of feed consumed: Increasing the energy level tends to decrease the amount of feed consumed although the energy intake usually increases slightly.

A high-energy feed is more digestible than a low-energy feed and thus more fat is deposited in the tissues and there is a decrease in the amount of droppings produced.

Each is building his world from within; thought is the builder; for thoughts are forces—subtle, vital, irresistible, omnipotent. And according as each is used does it bring peace or pain, power or importance, success or failure.

—Ralph Waldo Trine

In one experiment station test with pullets raised on clover range, about 5 pounds less feed per bird was consumed between 11 and 21 weeks by pullets fed a high-energy diet than by the same kind of pullets fed a standard-type ration.

It has been found that as the protein level of the diet is increased, the amino acid requirements increase.

Use Oat Hulls

It has been shown recently, during a six-week period, that ground oat hulls constituting about one-third of the mash for layers does not retard egg production if the mash is in pellet form. But, the higher the amount of ground oat hulls in unpelleted mash the greater the decrease in egg production.

The results of one test with Rhode Island Reds showed that 8 percent lard added to the diet resulted in an increase in body weight and feed efficiency.

The stimulation of early growth in chicks and poults by adding antibiotics to diets is accomplished by the indirect effects of the antibiotics on the microflora of the intestinal tract, the result being increased utilization of feed.

Feather meal, which contains approximately 80 percent protein, may some day be used as a supplement in poultry feeds.

Breed White Plumage

New meat-producing white-plumage strains carrying the gene for dominant white have been developed.

The white plumage of the White Leghorn is due to a gene that prevents the extension of black pigment to all parts of the plumage.

Dominant white meat-producing strains have been developed from original crosses between White Leghorns and White Plymouth Rocks. Also, White Plymouth Rock males that carry the dominant pigment-inhibiting gene in a homozygous (double dose) condition and are also homozygous for the gene for the extension of black pigment throughout the plumage, when mated to New Hampshire females, will produce white sons and white daughters.

These would be suitable for broiler production.

Develop New Strain

A strain of dominant White Plymouth Rocks has been developed that breeds true for the silver Columbian plumage pattern characteristic of Light Brahmas and Light Sussex but the progeny are white. It is only by mating colored breeds to these Dominant White Plymouth Rocks that their true genotype becomes revealed.

Crossbreeding for increased egg production has received an impetus this past year. It has been shown that the effects of increased vigor sometimes induces earlier sexual maturity than among purebred offspring.

Crossing White Leghorns and Rhode Island Reds has increased in spite of the fact that the crossbred progeny lays tinted eggs.

Crossing strains of the same breed or variety may sometimes produce progeny in which increased vigor or capacity for growth is as effective as in crossbred progeny.—*End.*

Some Points on how to . . .

Use Milking Machines Correctly

By J. C. Marlow

● THE MILKING MACHINE is one of the most important tools in the dairy industry.

If milk production is to anywhere equal the demand, we must have good milking machines, and good machine milking.

Better milking should be one of the major aims of every progressive and forward looking dairyman for increasing milk production by increasing herd efficiency.

Much education is needed to impress dairy men with the importance of the milking job and proper care, cleaning, and operation of his milking machine.

He should realize that the difference between profit and loss on his whole dairy operation is very often dependent on the correct method of milking.

In the past 45 years I've learned a great deal about milking machines, as a user milking my own purebred Holstein herds, selling, servicing, distributing, and manufacturing milkers.

During this nearly half a century, I have never ceased my study to further the development of the milking machine. Through the years my herds of Holsteins have served as a proving ground for my beliefs in proper milking practices.

Good equipment plus the ability to use it properly is necessary to get maximum results from machine milking. On the left is Author J. C. Marlow and his farm partner.

Proper Milking Neglected

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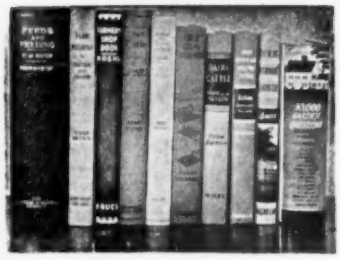

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cows for the milk and butterfat the cows produce. But, when it comes to milking, too many dairymen fail to grasp its importance.

Perhaps it is a case of not knowing just what takes place in the milking process and how great an effect it has on the reactions of the cow.

To begin with, the cows do their part by manufacturing the milk and storing it in their udders.

Fail to Get All Milk

However, in many instances the dairyman fails to get all the milk down and out of the udders.

This does not necessarily mean that he has failed to get all the milk out of the teats and milk cisterns above each teat. But, by improper milking the cow fails to let all the milk down from the upper part of her udder into the milk cisterns so that it can be removed.

Such a large percentage of the milk must be released by the cow during the milking process that her full cooperation during the milking period is a must. Therefore, what she feels and reacts to at that time is of utmost importance.

There are two actions that take place in a teatcup both of which are felt by the cow, and have a definite effect on how she reacts.

Suction Removes Milk

First, there is the vacuum or suction applied to the teat which removes the milk the cow has let down. Second, there is a massaging action caused by the collapse of the inflation which shuts off the milk and allows the teat to refill.

To get these results requires a specially built inflation for any certain machine. The action of the inflation also stimulates blood circulation and should act upon the nervous system of the cow in such a way as to cause her to keep a pressure on the udder and thus squeeze the milk down so that it can be removed.

Basically all milking machines work the same way. They all suck the milk out of the cow by means of a vacuum created in the teatcups. They all have inflations to massage the teats.

Action Differs

However, there is a vast difference in the action of different makes of machines and their effect on the cow because of the amount of vacuum used, the speed of the pulsations, and the kind of massage the teats receive.

To get the milk stored in her udder, two very important conditions must exist. First, healthy teats and udders, and second, cow cooperation.

All milking machine manufacturers have a vital responsibility to the dairy industry. First, they must build a sturdy, efficient machine that gets full

cow cooperation, and one that won't injure her delicate udder tissues which causes mastitis.

Second, the machine must be easy to clean.

Third, they must give expert installation and repair service and make periodical checkups.

And last, they must take a leading part in educating the dairyman in the proper use and care of his milking machine.

Modern methods are used in cleaning utensils in this milkhouse. Sanitation is always important in dairy operations.

For the dairyman, here are a few simple rules to follow and precautions to take.

First, never use more suction or vacuum on the teat than is needed to open the muscle and remove the milk.

Too much vacuum can and does cause teat erosion, hardness of quarters, leathery teats, and flareups of mastitis.

Second, the inflations must always be replaced often enough so that they will operate properly. Old or worn inflations have lost their elasticity and will slow up the milking action.

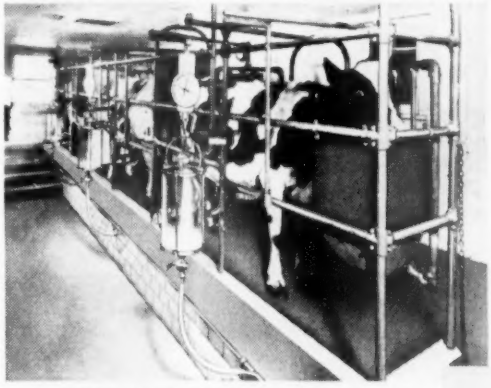
Units Must Be Complete

Third, for top efficiency from your milking machine, a complete installation of units to fit the machine is important. You must have a suitable vacuum unit, sufficiently large pipeline with 90 degree sweeps instead of elbows, large opening and non-leaking stall cocks.

Occasionally I run across dairymen who claim that the only proper way to milk is by hand. They are of the opinion that no machine can do the job on their cows that they themselves can do.

This is an erroneous belief. One by one these dairymen are discovering that there is a milking machine on the market which can milk practically every cow they have, and do an equally good, if not a better job than they were doing by hand.—*End.*

MARLOW MILKING PARLOR SYSTEMS



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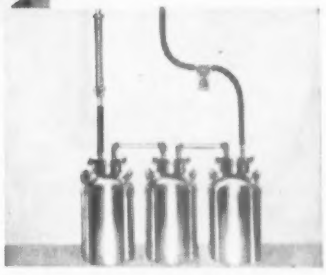
Left: Marlow perfected low 10" vacuum model "J" milking system with stainless steel fittings and heat resisting, graduated pyrex glass jar assembly. Below: Marlow line filter and automatic can fillers showing line trap.



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Field Reports on the NVATA

Your Reporter . . .

A. C. Hale

WEST VIRGINIA SENDS INFORMATION—A letter with picture and comments came to me this past month from Bond L. Bible, president, West Virginia Vo-Ag Teachers Association.

He tells about some of the outstanding work his FFA boys have done in parliamentary procedure work. His comments follow.

FARM LEADERSHIP IS NEEDED—A major problem facing agriculture today is the sorry state of farmer relations with the rest of the public. We urgently need rural leaders to present the facts of farm life to the city dweller.

I have always been impressed with the growth and development of a boy's leadership ability through the FFA program. One activity sponsored by the West Virginia FFA Association since 1940 has rendered a great contribution to our farm youth. I refer to the parliamentary procedure contest.

Oftentimes boys who are limited in facilities at home to develop an expanded farming program find other phases of the vo-ag program so interesting that they remain with it throughout their high school career. I know of several instances where the training in parliamentary procedure kept a talented youth in vo-ag. Invariably these individuals assume a place of leadership in the community where they find their life's work.

The FFA boys pride themselves in their ability to conduct meetings properly. Some of them become leaders in the school and the student body takes notice of the program.

Our FFA president this year is also president of the Student Council and president of the senior class. Recently he led a group discussion in a high school assembly of 500 students for an hour with poise and distinction.

The parliamentary procedure team of seven members are asked to give demonstrations before university and high school groups. Other teachers in the school request the FFA boys to appear in their classes for discussions.

Here is the parliamentary procedure team at practice with the chapter president presiding.

The English and social studies departments are teaching parliamentary procedure in their classes as a result of our effort.

The ag boys are justifiably proud of their leadership ability. Just another example of the value of giving the boys participation in a very worthwhile experience—conducting meetings according to accepted parliamentary procedure practices.

These boys will be the farmers of tomorrow and they will be able to furnish the leadership which is so vitally needed.

ANOTHER WINNING ESSAY—Here is the essay of Tom Raine, vo-ag teacher, Owatonna, Minn., that won one of the three prizes at the recent NVATA national convention.

PERCENTAGE PRODUCTION egg graphs help the FFA students in one school to graphically chart the ups and downs in their poultry business. Graphs are made for each month of the year. At the end of the year the twelve 8½ x 11 sheets are fastened together to picture graphically the entire year's production.

Students go about the job something like this. Near the door of the laying house, they fasten a calendar, put a nail close by, tie a string to the nail, and a pencil to the string. Then, whether it is dad, mother, or sonny who gathers the eggs, a reminder is close by to count and record the number of eggs for that gathering.

At the end of each month, students bring the calendar page to school. Here the totals are made, a day by day percentage graph constructed, feed costs determined, selling price per dozen eggs averaged, and from it the feed cost per dozen eggs subtracted to give the return over feed cost per dozen eggs for that month.

Now the percentage production graph and the return over feed cost per dozen eggs are studied. Is the return low? Then what was the trouble? Did the graph make a sharp dip or drop during the month? What caused it and how can it be remedied? Is production consistently low?

Then what about the feeding program, the ventilation system, the management practices used? Many practical farm problems are taught when the motivated student is most able to learn. He sees the problem and is interested in the solution.

Efficiency factors in poultry production can readily be constructed from the data gathered in this way. This is a practical method for individualizing the poultry study for each student enrolled.

THE CONTEST was such a success that it may become a regular part of every national convention.—*End*

★

Barbed Wire Winder

Two models of this new wire winder are available, one for row-crop and the other for standard tread tractors.

The purpose of this new implement is to save labor, expense, and eliminate some of the hazard of farm fence building.

Made by the H. D. Hume Co., Mendota, Ill., this farm implement will roll or unroll up to 80 rods of plain or barbed wire in three to five minutes. It rewinds through guides, and rewinds clean. It does not pick up grass, weeds, and other foreign material.

Farmers Identify Pasture Plants

● A NEW WRINKLE was used by extension personnel to acquaint Western Washington farmers with the grasses and legumes adapted to their soil and climatic conditions.

Pots of growing plants were taken on pasture tours and a contest held to identify these grasses and legumes—usually at the luncheon program.

After the identification contest, the extension leader gave simple methods by which various grasses and legumes could

These are some of the potted plants that Morrison uses in his work with farmers. They identify these and then discuss their adaptability to the particular soils in the area.

be distinguished from each other.

This gave an opportunity to discuss the various species of grasses and legumes and their adaptability to particular soils and response to various fertilizers. Farmers had an opportunity to determine what species were adapted to their particular soil conditions.

Later in the afternoon one farmer said he had alta fescue growing on his farm for the last five years and didn't know what it was until that day.

Identification of various species is important in pasture management programs. It is necessary for the farmer to identify various grasses and legumes to determine what management practices would give him maximum utilization.

Growing plants are much more interesting than mounted specimens. When they are in individual pots they are much easier for the farmer to identify and examine than when they are pointed out in the pasture mixture—*Kenneth Morrison, extension agronomist, Washington State college.*

3,500,000 babies a year are making your future bright!

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More than twenty-one million babies have been born in the United States in the last six years and the number of births continues very high. These post-war children are all growing up. They will need more and more food produced on your farm and prepared for the table in our plants. At the same time, older folks are staying with us longer. People who reach 65 can now be expected to live another 14 years, on an average.

The net result is that the population is going up at the rate of 7,000 a day—and so is the demand for "three meals a day."

There are other reasons why we believe the future looks very bright for everyone engaged in the business of providing America's food. The Department of Agriculture assures us that the land now being worked can be made to support enough hogs, cattle and sheep to provide 159 pounds of meat per person in 1955. Grassland farming and brush clearance programs are making it possible to increase the productivity and value of millions of acres of land. Better breeds of livestock and better feeds, new labor-saving machinery and improved management methods are all helping farmers and ranchers produce higher quality "raw materials" for our food supply—faster and more efficiently.

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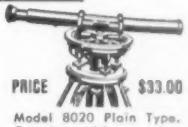

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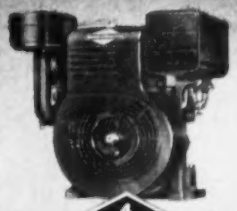

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What's New In . . .

Sheep Husbandry

By E. P. ORCUTT
Montana State College

● J. L. VAN HORN, Montana State college, and his associates in the Animal Industry department, are a curious, analytical bunch.

They got to discussing the question of twin lambs and decided to determine some cold-blooded mathematical differences between pairs of twin lambs and the singles raised in the same band.

The mothers of these lambs were Montana Agricultural Experiment Station ewes three to seven years old, which were run on forest range during the summer. The management and grazing of these ewes were very typical of commercial sheep summered in the mountains throughout this Northern area. The findings should have a rather wide application.

We will talk about the "twin ewes" and the "single ewes" to distinguish between the two groups because, after all, it is the lamb production per ewe that is of most importance.

Compare Lamb Weights

There were 304 ewe lambs involved in the study, 159 singles and 145 twins, not pairs of twins, but individual twins. All 304 head averaged 77.2 pounds. 159 singles averaged 83.0 pounds, 67 of the heaviest twins averaged 75.3 pounds and the lighter ones, 78 head, averaged 67.0 pounds. The average of the 145 twins at almost 71 pounds—141 pounds of lamb per ewe.

Now what was the difference in gross lamb income per ewe? At 22 cents per pound, the "single ewes" made $18.26 per head—ewe lambs of good quality were bringing just about that much money here in Montana at weaning time. The "twin ewes," however, turned off $26.98 worth of lambs at an arbitrary price of 19 cents per pound.

An $8.72 difference in favor of the "twin ewes" will pay a lot of expenses, won't it? Of course, and you can go right on and say, "I knew it all the time," and you would be right in that, too. Then, to the point.

Study Inheritance Factor

Let's look at the heritability of this twinning characteristic. As nearly as we can learn, it runs around 15 to 20 percent. This is more than a modest proportion when we are dealing with inheritance and definitely a high enough percentage to remember when selections are being made for replacements.

Now what do we do each fall when we go to work on the ewe-lamb bunch to sort out the ones we want to keep? Yes, exactly—we hold all of the biggest ones.

It is obvious, then, that we are working against the twinning characteristic in our customary methods of selection. We are drifting away from the ewe that turns off $26.98 worth of lamb and toward the ewe that turns off $18.26—on the same range, during the same summer, even in the same band.

To a 15 or 20 percent degree we are working toward a lower gross income and with a very minor cost difference between the two levels, too.

Efficiency Is Lower

Let's state it another way. Look at those 83 pound lambs there. Aren't they beauties? Away ahead of those 71 pound lambs. True, but think again.

The mothers of the heavier lambs were only 68 percent as efficient in their production as were the mothers of the lighter ones, and these ewe lambs are able to carry on that efficiency after they grow up and begin producing on their own account.

The human body still remains the most wonderful mechanism in existence. For instance, if you pat a man on the back, his head will swell.

"Well," you might say, "these twin lambs will never grow out. They will be small ewes and we know that small ewes can't produce along with big ewes."

Wrong again! These ewe lambs were wintered together in just an ordinary ranch manner. The heavier end of the twin lambs weighed the same as the singles did as yearlings at shearing time—each group made 96½ pounds.

Give Twins A Break

It seems conclusive, then, that it behooves any sheepman to step up his gross production by giving the twin ewe lambs a fair break at sorting time in the fall. This, of course, necessitates marking all of the twin ewe lambs when they are dropped in the spring. A small ear-notch is usually the best method.

Many sheepmen say that there isn't

any room left on the lamb's ear by the time they get the age mark, the breeding mark, and three or four other marks in. This is often true, particularly with men that are keeping good production records, yet most of them can find a way to do it once they have decided that they will profit by it.

Sort Lambs by Groups

Finally, at sorting time in the fall, all single ewe lambs should be cut to themselves and the twin ewe lambs to themselves, and an equal number of "tops" taken from each group.

This will mean that you are at least holding up the twinning characteristic instead of decreasing it.

If the twin bunch is extra good, you can sort more heavily out of it and reasonably conclude that you are increasing the twinning tendency—increasing the number of $27 ewes over the $18 ones. Worth doing, don't you think?—*End.*

★

County Agent James W. Cameron, right, receives silver plaque from North Carolina Governor Scott.

North Carolina Agent Honored At Luncheon

The county agents of North Carolina and Anson Agent James W. Cameron in particular, were honored in Raleigh recently at a luncheon sponsored by the Lederle Laboratories Division of the American Cyanamid Company.

Cameron, who is dean of Tar Heel farm agents by reason of his 41 years of service in Anson, received a handsome silver plaque paying tribute to his "exceptional service to the lands and people" of his county. The plaque was presented by North Carolina Governor Scott, himself a former county agent.

Extension Director David S. Weaver presided at the affair.

Principal speaker was a Lederle scientist, Dr. Robert H. White-Stevens, Pearl River, N.Y., who said county agents are "pastors of the land, devoted to teaching their flocks the religion of the soil. This," he added, "is a great mission, and one which everyone in all walks of life should recognize."

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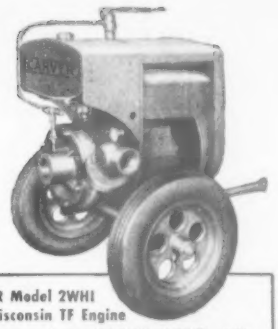

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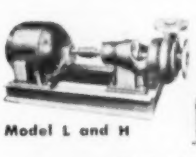
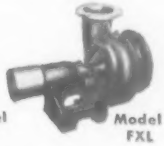


Model L and H

Model WHI

Model "K"



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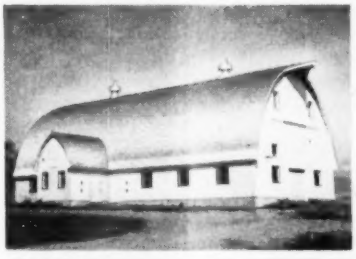

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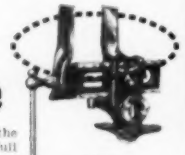

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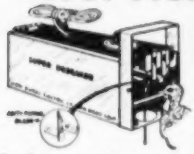

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A Brief Review Of USDA Personnel

For your information, here is a brief summary of the newly appointed officials within the United States Department of Agriculture.

Directly under Secretary Ezra T. Benson is *True D. Morse*, under secretary of agriculture.

He is a graduate of the University of Missouri, and is a former farmer and president of the American Society of

T. D. Morse

C. M. Ferguson

Farm Managers and Rural Appraisers. Prior to his appointment he was president of the Doane Agricultural Service, Inc., St. Louis, Mo.

J. Earl Coke is assistant secretary of agriculture.

Directly prior to his appointment he was Director of the Agricultural Extension Service in California. He is a graduate of the University of California where he specialized in agronomy.

He was assistant county agent in San Luis Obispo county and later an extension specialist at the University of California.

In the department he will have charge of the research, extension, and land-use group.

Administrator of the Production and Marketing Administration is *Howard H. Gordon.*

A graduate of North Carolina State College, he was formerly an extension specialist in agricultural engineering and did similar work with the Virginia Extension Service.

Prior to his appointment he was assistant general manager of the Southern States Cooperative.

Richard D. Alpin, assistant to the secretary, is a graduate of the University of Vermont. He specialized in animal husbandry and agricultural economics.

A former county agricultural agent of Addison county, Vermont, he will take charge of the departmental administration group.

John H. Davis is president of the Commodity Credit Corporation. Prior to his appointment, Davis was general manager of the National Wool Marketing Corporation, Boston, Mass.

He is a graduate of Iowa State College and received advanced degrees in agricultural economics from the University of Minnesota.

He is a former vo-ag teacher and superintendent of schools, and will head the commodity marketing and adjustment group.

Romeo E. Short is assistant to the secretary. He attended Iowa State Teachers College, is a farm operator, and past president of the Arkansas Farm Bureau Federation.

The Agricultural credit group in the department will be his responsibility.

The solicitor is *Karl D. Loos.* A successful farm operator, he is a graduate of the University of Iowa and a successful Washington, D. C. lawyer.

D. K. Broadhead is executive assistant to the secretary of agriculture. He is a graduate of Utah State Agricultural College, specialized in agricultural economics and marketing, and has been associated with agriculture all his life.

A special assistant to the secretary will be *Don Paarlberg.* He has been a member of the staff of the Purdue University department of agricultural economics for the last six years.

He graduated from Purdue and received his doctor's degree from Cornell University.

John C. Davis is administrative assistant to the secretary. He will work in the general field of policy and information. Prior to his appointment he was farm editor of the Cleveland, O., *Plain Dealer.* He is a graduate of Western Reserve University, Cleveland.

An attorney from Glenwood, Ia., *Whitney Gillilland,* will be assistant to the secretary.

He attended Iowa State College and the University of Nebraska. He will be responsible for relations with state commissioners, secretaries, and directors of agriculture.

Director of Extension will be *C. M. Ferguson.* He was extension director of Ohio prior to his appointment to this post in the USDA.

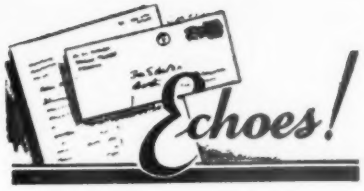
Ferguson graduated from the Ontario Agricultural College, Guelph, Ontario, Canada, and was a former extension poultry specialist at Michigan State College.

★

Aluminedge Level

Ag leaders interested in the new aluminum bound masons' wood level can receive information on it from the Columbian Vise & Mfg. Co., 9023 Bessemer Ave., Cleveland 4, O.

This new level is completely enclosed with aluminum on every edge. Another feature is the use of metallic-sealed vials which eliminate use of the conventional glass drawn tips. They are enclosed in a new type plastic ring which affords further protection against breakage and gives maximum light reflection for easy reading.



More Comments on the Index

If it is still worth anything I would be most anxious to have an annual index for Better Farming Methods. My current clipping file of the magazine is becoming a bit confusing. You have a number of excellent articles.—*Arvid F. Miller, county extension director, Leon, Ia.*

I keep all my copies of Better Farming Methods and need the subject index printed in the December issue. Keep it up.—*William B. Andrews, assistant county agent, New Haven, Conn.*

Just a note to tell you that I do like the idea of an index in the Better Farming Methods magazine because I keep the back copies. I would like to see it continued.—*James Hamilton, vo-ag teacher, Audubon, Ia.*

To those teachers who save their magazines, it would be of great value, but for me and others like me it is useless. You see, I cut out articles of interest from each issue and file them under their proper headings, then discard the issue.

I would venture to say there are enough teachers in the first group to warrant your continuing this practice.—*T. C. Baucom, vo-ag teacher, Garner, N.C.*

Your editorial index—very much worthwhile. Keep it if you can.

I save all my Better Farming Methods copies—use them in my classwork.—*Arnold Huigens, vo-ag instructor, Valley, Neb.*

I have just finished reading the December issue and looked over the index. As I looked over the index I said, "I wonder if I have that issue?" as I saw a topic I wished to read. I believe the index is well worth the space and time. I always have two copies of your magazine available within arm's reach. They are the last two directory issues. I need them for names and addresses at frequent intervals.—*Harold E. Gulvin, head, Department of Mechanized Agriculture, University of Rhode Island, Kingston.*

The subject index will save much time in finding articles at the end of each year. I bind each year's copies together and the index will save me much time and will be used more often.—*Robert L. Rogers, vo-ag instructor, Wayne, O.*

Just a note to give you my opinion on the yearly index. I think it is a mighty fine idea. Since I file my magazines and don't always get to read them when they are received, it gives me a chance to read some of the articles that I have missed and would have a definite need.—*Elmer Elmshaeuser, vo-ag instructor, Bayard, Neb.*

The Better Farming Methods magazine came today and I went over the reader's index which you have in this issue. I very much approve of this index. I am a new teacher of vocational agriculture and have a very active shop program in our new building. I looked up the back issues which had farm shop topics in them and plan to study them during our Christmas vacation. —*Charles Rueb, vo-ag instructor, Kewanee, Ill.*

The great response from readers indicating acceptance of the index is indeed gratifying. It will be continued as a yearly feature of the magazine.—Editor

★

Infrared Brooder

One of the features of this infrared brooder is a thermostat on top of the picture that controls two of the four lamps. It will turn them off or on depending upon the changes in house temperatures.

Also it is a patented feature that helps eliminate fire hazards. A special switch will turn off all four of the lights if the brooder is tilted as little as 15 degrees.

The outfit is manufactured by the LML Engineering & Manufacturing Corp., Columbia City, Ind.

★

Coming Events

March 7-15—National 4-H Club Week.

March 16-19—Oregon state FFA convention, Oregon State college, Corvallis.

March 26-27—25th annual convention, Michigan Association of Future Farmers, Auditorium Bldg., Michigan State college, East Lansing.

April 15-18—Washington state FFA convention, Pullman.

April 21-24—Northwest Junior Livestock Show, Auburn, Wash.

April 24-25—Missouri state FFA convention, Columbia.

April 30-May 1—National Land Judging contest, Oklahoma City, Okla.

May 10—National 4-H Sunday.

June 4-5—Ohio FFA convention, Columbus, O.

June 16-19—Ohio Vo-Ag Teachers' conference.

June 17-24—National 4-H Club Camp, Washington, D. C.

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NEW BOOK shows how to make MONEY growing chickens for meat!

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KEEPING UP IN Agriculture

Colleges

TRICHOMONIASIS—University of Wisconsin veterinarians are on the trail of a possible cure for trichomoniasis—a serious breeding disease in dairy cattle. Veterinarians have promising results after laboratory tests of a series of drugs and antibiotics. Their results are not sure cures at this time, only possibilities. Tests with animals under practical farm conditions are necessary before the veterinarians can learn the true value of the drugs.

PREVENT KETOSIS—Ketosis kills many ewes at lambing time, but proper feeding will go a long way toward preventing it, University of Illinois veterinarians report. Ketosis, also called pregnancy disease, occurs most frequently in ewes fed almost wholly on poor-quality roughage. One safeguard is to give the ewe about one-fourth pound of grain a day along with liberal amounts of good legume hay, beginning the eighth to sixth week before lambing. Increase the grain slowly to one pound a day during the fourth to second weeks. Also, give the ewes a chance to exercise during the day. Ewes carrying more than one lamb are most likely to have the disease.

UREA—Using urea in cattle feed supplements isn't necessary for good performance, and it isn't a magic substance. It has been proven all right to use for beef cattle, but it isn't considered too good for dairy cattle yet, says Dr. Ernest F. Waller, University of Delaware animal industry department. Urea can be unpalatable and poisonous when fed in large amounts. It must always be thoroughly mixed and in correct amounts. Another disadvantage of urea is that it is not available to farmers. It can be purchased only by manufacturers for use in mixed feeds at the present time.

MILKING BARN—Oklahoma A & M agricultural engineers have designed and are testing a portable Grade A milking barn built in sections so a tenant farmer can take the structure with him when he moves to a different farm. Plans are not yet available, but will be published if tests prove the structure is practical.

SKIMMILK FOR CALVES—One pound of dried skimmilk mixed with one gallon of warm water, given in two feedings per day, is a satisfactory replacement for one gallon of whole milk in the rations of dairy calves three weeks old and older, according to tests made at Texas A & M. Both Jersey and Holstein calves were used in the feeding experiments. After being changed from whole milk to the dried skimmilk ration during the fourth week, the calves had no reduction in rate of growth and showed no detrimental effects.

HOOF AND MOUTH VACCINE—A report from France indicates that an effective vaccine against hoof and mouth disease has been developed. It is reported that this vaccine is much more effective than those now used. It is hardly available, for France can only produce about one-fourth of its country's needs.

USDA

MODIFIED 2,4-D—The successful chemical weed killer 2,4-D has now been modified so that certain forms of it are beneficial to tomato plants, according to preliminary tests made by the U. S. Department of Agriculture. Modified 2,4-D caused fruit to "set" and tomatoes developed without pollination. These tomatoes were of increased size and excellent quality. Dr. G. E. Hilbert, chief of the Bureau of Agricultural and Industrial Chemistry, emphasized that work thus far has been done under controlled greenhouse conditions, and

that further studies, including field tests, are necessary before there can be applications of commercial value.

NEW ORANGE POWDER—A new process for the manufacture of powdered orange juice, announced by the U. S. Department of Agriculture, yields a product that stores well under severe conditions and makes an attractive, fresh-flavored beverage when reconstituted with water. An attractive characteristic of the new powder is its ease of reconstitution. An appropriately measured quantity of the powder dropped into a glass of water (even ice water), dissolves immediately and remains dispersed in the water, without settling out. The color is that of fresh orange juice. Tasters have uniformly praised the flavor as that of natural orange.

LIVESTOCK RESEARCH — Recommended points of emphasis recently made by the Livestock Research Advisory committee under the Agricultural Marketing Act included: Further study on control of hog vesicular exanthema; increased production of meat-type hogs to cut the main cause for unbalanced supply of animal fats; further work on production of high protein feeds by growth of yeasts on a nutrient solution of farm products; more study on cause and cure of bloat in cattle; addition of quarterly market news reports of cattle on feed and pig numbers, and forecasting more timely figures on calf crops.

LINDANE AND MILK FLAVORS —USDA dairy and entomology workers have issued a circular—BHI INF 145—relating to studies of the effect of lindane on milk quality when used as a fly and lice and mange control measure and when sprayed on forages. They found that an abnormal flavor exists in milk when lindane is fed at high levels of intake. They say it seems improbable, however, that feeding forages sprayed with lindane at recommended amounts would cause objectionable off-flavors in milk. It is likely that different milks vary widely in their susceptibility to production of off-flavors by lindane contamination.

PIG CROP—The December report on the pig crop showed an estimated total of 91.8 million head, as reported by BAE and the rural mail carriers. The decline was 10 percent, 9 percent down for the spring pigs and 11 percent for the fall farrowing. Indications of this year's spring litters based on breeding intentions shows a 13 percent drop below the number of sows farrowing last spring. The all-time record annual pig crop was about 122,000,000 head in 1943.

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3. **Then tear out these original sheets from the magazine and mail them to HELPFUL BOOKLETS DEPARTMENT, BETTER FARMING METHODS, MOUNT MORRIS, ILLINOIS.**

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—"Corriedale American Standard of Correct Type"
—"Fifteen Reasons Why Corriedales Excel"

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—"Liquid Gold"
—"Where to Buy Guernseys"
—"Success With Guernseys"

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—"Recording and Transferring Herefords"
—"Plan and Profit With Herefords"
—"If You Have Land and Grass"

AMERICAN JERSEY CATTLE CLUB
—"Jersey Judging Made Easy"
—"Jersey Milk"
—"Jersey Breed Improvement Programs"
—"The Dollars and Sense of Registered Jerseys"

AMERICAN POLLED HEREFORD ASS'N
—"Polled Hereford Winners"
—"Rules Governing Registering and Transferring Polled Herefords"
—"Questions and Answers About Polled Herefords"

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—"Pointers for Prospective Breeders"
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—"1947 International Grand Champion Steer"
—"1952 International Grand Champion Steer"
—"International Shorthorn Champion Load of Fat Cattle"
—"Steps to Success"
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—"Manual of Rules of Registry and Information"

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—"Condensed History of the Holstein-Friesian Breed"
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—"Four Good Reasons"
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—"Corn Cultivation"
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—"How Deep Should Corn Be Planted?"
—"Don't Judge a Kernel by Its Looks"
—(Chart) "Hybrid Seed Corn and How It Is Made"

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—"Corn Guide Catalog"
—"Corn Data Notebook"

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—"Inoculated Legumes for Better Farming"

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—"Germ Protected Seed"

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For What It's Worth

By HERBERT L. SCHALLER, Editor

We Need More Research

U. S. Farmers now produce 69 percent more than 40 years ago with 20 percent fewer manhours of labor and only 11 percent more harvested acres.

Somewhere, recently, I saw that statement and copied it down.

To me, it is proof that agricultural research has carried the progress of agriculture to a new high.

Fine! That is wonderful! But, the facts of the present day seem to indicate that we are willing to rest on our accomplishments and not pursue diligently expanded research.

From an address by Senator Clinton P. Anderson, former Secretary of Agriculture, at the Farm Bureau convention recently, he quoted the following statement by Dr. Byron T. Shaw, head of the Agricultural Research Administration.

"Our current position in research is unfavorable. We have not been turning out new findings at a rate equal to the rate in which they are being used.

"We need to start the research frontier moving upward at a more rapid rate. *Since the response of the average producer follows most research advances by a time delay of 10-15 years, the time to start moving the research frontier is now.*"

Notice the last statement. In essence, now is the time to move.

Again quoting Senator Anderson, he mentioned a statement that General Eisenhower made during the campaign for the Presidency.

"Agricultural research and education have been neglected by this administration. The total amount granted for research, for example, has been less than the cost of salaries and expenses of the PMA alone.

"We are going to change that. We shall develop an agricultural research and extension program to meet present and future needs."

Note in this statement that research and education are linked together. It takes education to get farmers to adopt research findings.

Now, consider the proposed US DA budget for 1954. An estimated $1,827,000,000 is to be spent.

The agricultural research administration is down for $75,606,722, which includes payments to the state experiment stations.

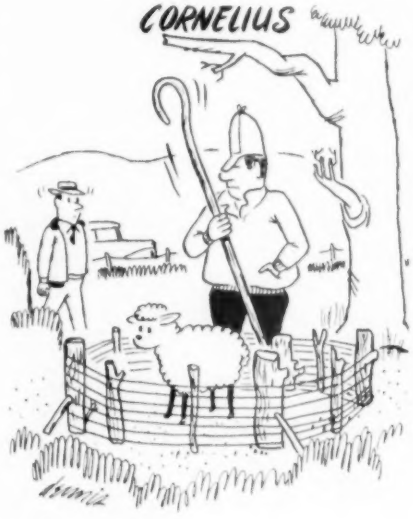
The Extension Service (principally payments to states) is budgeted for $28,065,384.

It is interesting to note that research and education draw but $103,672,106 out of the entire USDA budget.

With this as a background, there are several conclusions that one can logically draw in relation to agricultural research.

1. In view of the importance and necessity for continued agricultural research as it affects the entire country, all agricultural people should exert their influence to enlarge funds available for agricultural research.

Remember, it takes years from the time research on a project is started until it can be transformed into practical and everyday application. With increased importance placed on agricultural products and efficiency, research is vital to the well being of our entire country.



2. Now is the time to get more research.

The problem has been recognized and a promise has been made by the present administration to develop both agricultural research and education programs to meet present and future needs.

All agricultural leaders and agricultural people should be alert and cognizant of this fact, and do all within their power to see that action is taken now to assure fulfillment of this promise.

3. Research and education is the foundation of a free agricultural people.

Research is creative, inventive, productive. Throughout history only free people have ever made tremendous progress in research.

Hand in hand with research goes education. It is of little use to have a variety of new adaptations in the agricultural field and not have them accepted or applied by farm people.

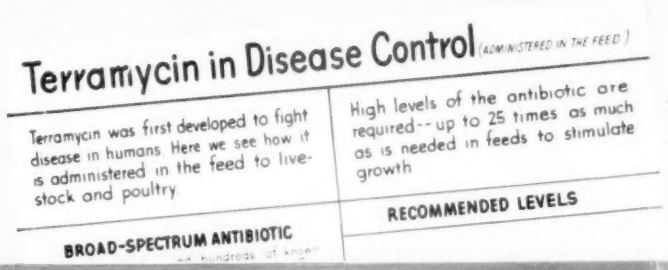
Therefore, education becomes a tool of productivity also. All agricultural leaders have a vital part in translating and interpreting new agricultural advances for the betterment of their farm people.

I would not minimize the other component parts of this vast agricultural field. But, a note of caution.

We should not let the non-productive items grow out of proportion to the emphasis we place on research and education, the very foundation of increased agricultural production.

HLSchaller

Heavy paper, 22 x 28 inches, printed on both sides. Large readable letters for classroom use.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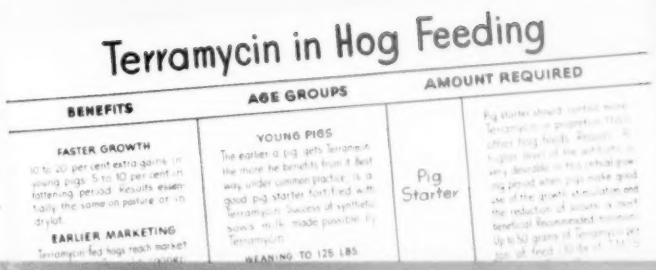

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Free to Vo-ag Teachers–County Agents–Club Leaders

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This material was prepared in response to many requests from the field. It has been approved by Vo-ag men as suitable for class use. (It contains no advertising.)

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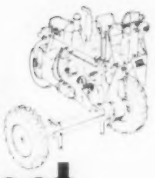

COMBINE ALL YOUR GRAIN, SEEDS and BEANS with the UNI-TRACTOR and HARVESTOR attachment

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Here's *profit* farming . . . *your* answer to bigger crops harvested at a lower cost than ever before. Now, with the new Minneapolis-Moline Uni-Tractor and Uni-Combine you get all the advantages that make MM Harvestors preferred combines *plus* a real saving in equipment costs. Mount the MM Uni-Combine on the Uni-Tractor and you immediately have a big-capacity, smooth-running self-propelled combine. And, look at the outstanding features: variable-speed drive that allows you to change ground speeds from the seat without changing threshing speeds; cylinder speed adjustable from 300 to 1200 rpm; fishback channels that keep grain evenly spread over the pan to eliminate bunching on rolling land; the famous MM one-piece, steel concave and grate; high-speed auger unloader; header hydraulically controlled with advanced MM Uni-Matic power . . . important advantages that *pay off* in an easier harvest, better profits for you.

THEN, PICK AND HUSK YOUR CORN with your UNI-TRACTOR and PICKER-HUSKOR attachment

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Now you can get *cleaner* corn, get it in *faster* and *easier* with the MM Uni-Huskor. Pick and husk your corn with all the MM Huskor improvements plus the advantages of a self-propelled unit. Now, see these features at your MM dealer's showroom: snouts that adjust to five floating positions, four snapping rolls, 53½" long, to get the high, low, and out-of-line ears; ten 36" rubber and steel husking rolls; husking raddle, with rotating and side-to-side action for surer husking; cleaning fan for cleaner crops; safety clutch; gears running in a bath of oil; roller bearings on *all* main drives . . . advanced design from stem to stern. Just one bolt, two slip pins and two spring-release pins mount the Uni-Huskor on the Uni-Tractor. Changeover is fast and simple —a feature that pays *double dividends* when you're harvesting corn and combining soybeans.

. . . OR, PICK AND SHELL YOUR CORN IN THE FIELD with your UNI-TRACTOR and PICKER-SHELLER attachment

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